DIFFERENCES IN CIVIL ENGINEER PERCEPTIONS OF CHANGE BASED ON PRIOR TRAINING AND EXPERIENCE

THESIS

Steven W. Lo, Captain, USAF

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DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

20010508 089

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Steven W. Lo, B.S.

Captain, USAF

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Steven W. Lo, B.S.
Captain, USAF

Approved:

Alfred E. Thal, Jr. (Chairman)	8 MAR 01
Alfred E. Thal, Jr. (Chairman)	date
Michael T. Rehg (Member)	8 Mar 01
Michael T. Rehg (Member)	date
Daniel T. Holt (Member)	01 MAR 01
Daniel T. Holt (Member)	date

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Abstract

The Department of Defense (DoD) and the United States Air Force (USAF) have moved toward an aggressive stance to competitively source and privatize (CS&P) support functions as much as possible. This move is intended to shrink support costs and redirect the savings to force and equipment modernization. In addition, the USAF hopes to realize improved services, gain access to technology, share risks with contractors, and allow its forces to focus on the core competencies. In order to implement CS&P, the USAF communicates information through two major pathways, passive and active. Passive communication is similar to traditional classroom learning where information is read or briefed to subjects. Active training is learning through actual experience. Though both types of training have been proven effective, it is hypothesized that active, or experiential, training positively affects the subject's perception on outsourcing more than passive training. A web-based survey was developed to measure constructs involving perceptions of outsourcing and determine what type of training the subjects had received. Analysis of variance showed no statistically significant differences between these two groups. However, subjects that had received both types of training were overall more negative on their views toward outsourcing.

DIFFERENCES IN CIVIL ENGINEER PERCEPTIONS OF

CHANGE BASED ON PRIOR TRAINING AND EXPERIENCE

I. **Introduction**

"Do More With Less"

The demand to "do more with less" is fast becoming the unofficial operating

standard in the Department of Defense (DoD) as missions increase and resources

become more limited. The U.S. Air Force (USAF) is struggling in this environment

as its infrastructure continues to deteriorate without adequate funding to replace it,

equipment wears from extensive use without programmed replacements or spare

parts, and mission changes increase the workloads of already understaffed

departments. Additionally, force retention problems exacerbate knowledge and

skills deficiencies in the technology-intensive field of airpower, and forecasts for

overall defense spending do not indicate sufficient increases in the future. The list

of concerns and challenges goes on and a common theme appears: increase the

output (accomplish the old mission and perform new additional tasks) without an

increase in input (funding and resources).

History of Cost Savings in DoD

One way the DoD tried to meet these funding challenges was the force

drawdown and downsizing efforts that began during the late 1980s and continued

through the mid 1990s. Savings from the subsequent manpower cuts were

intended to sustain the organization since a smaller force would require fewer resources. However, recent increases in mission requirements are overburdening the smaller force. Further reductions in force structure may entail risk because of the number of troops needed to sustain the DoD's war plans (Defense Science Board, 1996:9). Base closures announced in 1995 helped to decrease the drain on resources and provided minimal relief to the manpower strain by reducing the raw square footage the DoD had to maintain. Military bases and their associated personnel provide business for the areas they are located in. Thus, local economies are adversely affected if the base is closed. This economic need for military bases is strongly defended by the lawmakers whose constituency is affected by the bases. Political pressures and the increase in mission requirements limit the future use of force drawdowns and base closures to save money.

Outsourcing as a Cost Saving Option

An option being increasingly used to meet some of these challenges is a method to increase organizational efficiency through a process known as outsourcing. For the DoD, outsourcing is the transfer of a commercial activity or function to a provider outside the organization while the government retains overall responsibility and control (OMB Circular No. A-76, 1999). This is basically contracting out the labor portion of a function or service to the lowest bidder while the government provides the materials and infrastructure. Outsourcing is officially termed competitive sourcing to eliminate the perception that the lowest bidder cannot be the government organization.

The use of contract services and outsourcing in the USAF is not a new concept. Utility plants on bases are being shut down in favor of purchasing water and power. Garbage removal is contracted out to local companies. Civilian contractors accomplish major construction projects. Various forms of outsourcing are apparent throughout the USAF, and were originally addressed almost a half-century ago by General LeMay.

> "The growth in use of contract services by the Air Force has become a matter of genuine concern . . . focused particularly on what missions and jobs the Air Force has, plans or should perform with military and civilian personnel versus what missions and jobs have been, can and should be performed by contract services . . ."
> - General Curtis E. LeMay
>   Vice Chief of Staff of the Air Force
>   October 6, 1958

Despite its original intent, outsourcing is now being embraced as a primary way to meet cost saving objectives.

Today, the formal program in the USAF for outsourcing is called the Competitive Sourcing and Privatization (CS&P) program. The USAF is pursuing an aggressive CS&P stance to take advantage of the recent boom in outsourcing capabilities of the private sector. The program's primary purpose is to save money for the USAF by reducing support costs and free up limited funds for force and weapons modernization and equipment upgrades. Secondary purposes of CS&P include increased service and performance effectiveness through expert providers. Also, by contracting out commercial activities, the remaining forces are freed of non-military tasks and allowed to concentrate on USAF core competencies. Access to world class capabilities and technology, sharing risks with contractors, and shedding excess infrastructure are additional benefits from outsourcing

(Defense Science Board, 1996:17; Edwards, 1998:96; Putrus, 1992:31; Quinn, 1999:9).

Due to the nature of their missions, base support functions such as communications, medical care, warehousing and logistical functions, and civil engineering are the most eligible candidates for outsourcing opportunities. The Civil Engineer (CE) function is especially ripe for CS&P opportunities because maintenance of facilities and infrastructure, supervising new construction, and property management are all functions effectively accomplished in the private sector. These functions are eligible for outsourcing because they are commercial activities and not specific to the war fighting function of CE.

CS&P Keys to Success. Because the USAF war fighting capability is directly dependent on the successful performance of base support functions, it is imperative that contracts for outsourced contracts be administered carefully. Within the Civil Engineer organization, functions that are outsourced are the responsibility of mid to upper level managers comprised of senior captains, field grade officers (FGOs), and their civilian equivalents. Field grade officers hold the rank of major, lieutenant colonel, and colonel. These managers must comprehensively understand the aspects of partnering to administer the CS&P contracts successfully.

A key aspect of administering contracts is the vigilant understanding of the outsourcing process and the fostering of an intimate working relationship with the contractor in a process known as partnering (Defense Science Board, 1996:22). Partnering promotes a more effective and friendly contract relationship based on

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fundamental trust (Mayer, 1998:14).   Effective training for the USAF managers is a fundamental step for successful partnering.

   CS&P Causes of Failure. Two major causes of DoD outsourcing failure have been cited in the literature. These include bad partnering and incomplete contracts (Defense Science Board, 1996:23). Bad partnering leads to an adversarial relationship and degradation of trust. Incomplete contracts provide an avenue for an opportunistic contractor to charge excessively for services not specified or escalate costs unchecked (Lang, 2000:34). Both of these causes can be avoided by providing the right information to the CE officers so they can write complete contracts and understand the outsourcing process for successful partnering.

   USAF Communication of CS&P Information.   To promote understanding of the CS&P program, the USAF provides a wide variety of training at the Civil Engineer and Services School at Wright-Patterson AFB, OH. Some examples are the Competitive Sourcing class, the Privatization class, and a block of instruction during the Base Civil Engineer Command course. Various contracting conferences held by the Air Force Civil Engineer Support Agency (AFCESA) are also used to communicate information about CS&P. The classes and conferences consist mostly of classroom discussion, informative slides, and other academic learning methods. These types of experience can be classified as passive, or vicarious experiences.

   Another way for CE officers to gain knowledge about the outsourcing process is to directly experience it by being selected to an A-76 board. The Office

of Management and Budget Circular Number A-76 mandates this board, used to initiate the competitive sourcing or privatization process, for all cost comparisons. Some of the board's main activities include analyzing cost data, weighing the benefits and drawbacks of outsourcing a particular function, researching mission impacts of the outsourcing, developing the performance work statement for the contract, and determining the Most Efficient Organization (MEO) for the contract. The learning accomplished during active participation while implementing the A-76 process can be classified as experiential experience.

Hypotheses

Experiential and vicarious types of training and experiences contribute to an officers' understanding of the CS&P program differently. There are many theories on what constitutes effective training, but there are few recognized theories on learning styles. A theory called the Learning Style Inventory categorizes learning into two dimensions, learning from cognitive exercises and readings (vicarious) and learning through active participation (experiential) (Lam, 1998:401). The vicarious learning can be equated to the academic experiences and experiential learning to the participation in the A-76 process. The following four hypotheses attempt to discover any significant differences in perceptions of outsourcing based on prior vicarious or experiential training and experiences.

Hypothesis 1: Information and Understanding. Due to the complex nature of the outsourcing process, an individual with active participation may gain a better understanding of the CS&P program. Actively applying newly learned material may help to clarify the concepts of competitive sourcing and accustom the

individual to the complexities of a cost comparison. Additionally, the individual may feel that the immediate application of information learned increases their understanding of that information.

> *Hypothesis: Officers and civilians who have actively participated in the outsourcing process understand the CS&P program and the information they have received better than officers who have only vicarious or no experience.*

Hypothesis 2: Legitimacy. Perceptions concerning the legitimacy of a change are critical to the success of the change. Social accounts theory explains that individuals perceive legitimacy based on their trust in management and management's explanations for a change (Rousseau & Tijoriwala, 1999:516). The USAF provides the rationale behind CS&P during the vicarious and experiential training. Beliefs that changes are fair also contribute to the perceived legitimacy of a change. Therefore, an individual who participated in the outsourcing process and helped make legitimate decisions, besides feeling a sense of ownership in the process, may feel the CS&P program is a legitimate change for the USAF to implement.

> *Hypothesis: Officers and civilians who have actively participated in the CS&P program perceive the program to be more legitimate than those with only vicarious or no experience.*

Hypothesis 3: Benefits. The benefits of outsourcing are well documented and include a core of seven benefits that are mirrored in the goals of the CS&P program: 1) Reduce and control operating costs, 2) Allow the organization to focus on core competencies, 3) free funds for strategic investment, 4) gain access to world-class capabilities and technology, 5) Share risks, 6) Shed excess

infrastructure, and 7) Improve service and performance. Actively participating in the outsourcing process may help individuals identify the benefits of outsourcing since these individuals are making decisions based on which bid offers the most benefits at the least cost.

> *Hypothesis: Officers and civilians with active experience in the CS&P program perceive more benefits from the program than individuals with only vicarious or no experience.*

Hypothesis 4: Support. By understanding the CS&P program better and knowing the benefits of the changes, officers should be more successful in implementing and administering the contracts. Knowledge of the program's end benefits can help with correctly writing service contracts and facilitate better partnering. Senior leaders and supervisors appoint individuals to outsourcing boards so that those individuals can help make the best-informed decisions. From taking part in an outsourcing, individuals are supposed to make a decision beneficial to the USAF and indirectly beneficial for them. By picking the Most Efficient Organization to accomplish the function, these individuals should feel they have increased the effectiveness and efficiency of the USAF and made their own jobs easier. This positive outlook may help the retention problem the USAF is currently experiencing.

> *Hypothesis: Officers and civilians with active experience in the CS&P program perceive that their leaders and supervisors support CS&P and that CS&P is beneficial to their careers.*

Scope of Research

This study focuses on the existence of, and relationships between, types of outsourcing training, understanding of CS&P, the perceived legitimacy of the CS&P program, and the perceived benefits from the CS&P program. This information will be gathered from mid to upper level managers in the USAF CE community. The results will be analyzed and compiled to determine whether classroom training, active participation in the A-76 process, or a mixture of both increase understanding and legitimacy of the CS&P program for CE upper management.

Overview

Chapter I, Introduction, provides a quick summary of the concepts to be explored and explains the utility of the results. Chapter II, Literature Review, follows with a more detailed review of the theories and constructs involved in this research from recent articles and other published material. Chapter III, Methodology, outlines the development of the survey used to gather data from CE managers and the statistical methods used to analyze the data. Chapter IV, Analysis and Discussion, interprets and explains the statistical results from the data. Chapter V, Conclusions, summarizes the findings in relation to the hypotheses and proposes areas for further research.

II. **Literature Review**

Changes introduced by the Competitive Sourcing and Privatization (CS&P) program to civil engineering have enormous impact on the personnel implementing the program. Reactions to these changes are obviously influenced by prior experiences, specifically CS&P training provided by the USAF. Through this training, people should more fully understand the reasons behind CS&P and learn more about the factors that contribute to successful implementation of CS&P. As a result, their beliefs regarding the legitimacy of the changes are expected to increase. If perceived legitimacy increases, it is also expected that employee commitment to the CS&P program will also increase. This is important since commitment is considered critical to the successful implementation of a change.

USAF Training to Communicate CS&P Information

The training the USAF provides to its people, in particular to civil engineers, as they prepare to implement the aggressive CS&P program in their areas is an attempt to communicate information about CS&P and why the USAF is pursuing CS&P. The USAF uses many avenues to communicate the CS&P program to its civil engineers. Periodic magazine articles and newsletters serve to provide guidance on and update the CS&P policy. For example, the A-Gram provides updates to base civil engineers and all flight chiefs on changes to the CS&P program and A-76 cost comparison procedures. The USAF also provides formal training at the Air Force Institute of Technology, Civil Engineer and Services School, Wright-Patterson AFB, OH. While this training is not mandatory, those that

attend receive information concerning the goals, objectives, and policies of the USAF towards outsourcing and privatization. Another avenue for communicating CS&P news to USAF civil engineers is the Air Force Civil Engineer Support Agency (AFCESA) Internet web site. In addition, AFCESA holds several conferences a year to discuss CS&P and address particular questions from those attending. Since CS&P training is not mandatory, individuals commonly staff A-76 studies with little or no training. Thus, the information that these individuals receive about CS&P comes from hands-on experience with, and immediate application of, information in the outsourcing process.

Kotter (1996) explains that communication leads to employee understanding and commitment to the change. Daly echoes this sentiment by stating that, " . . . employee commitment to a change is enhanced when managers educate employees (i.e., explain to them why the change is occurring and how it will affect them)" (Daly, 1995:415). Thus, if an employer successfully communicates the reasons and goals for the change, it logically follows that the employee will understand why the change is necessary. This understanding should lead to acceptance of the change (Pollack, 1998:10). It is common sense about human nature to want to reduce uncertainty by learning more about the unknown. Thus, information about coming changes should be provided to employees so that they are less uncertain about what changes will occur, understand how the changes will affect their job and organization, and how the employees should respond to a change (Wanberg & Banas, 2000:133).

The USAF desires the end result of the training to be successful communication of the CS&P program objectives and pertinent information. Armed with this knowledge, USAF personnel understand the goals of the CS&P program, realize the underlying factors for successful implementation, and can implement an outsourcing effort confidently. As mentioned before, there are currently two ways for personnel to receive this information. They can receive the information passively by reading literature or being briefed information in a classroom or conference. Individuals can also receive information by actually experiencing the outsourcing or privatization process firsthand. This way, they learn as they actually perform the policy and implement actions in accordance with CS&P goals.

Types of Training

A widely known method for classifying training is Kolb's Learning Style Inventory in which learning style is broken down into four categories (Kolb, 1984; Loo, 1996). Individuals immersing themselves in the learning experience are categorized as Concrete Experience (CE) learners. Individuals preferring to risk active participation in the learning process by taking a "hands on" approach are listed as Active Experimentation (AE) learners. Those preferring to take a rational and logical approach are referred to as Abstract Conceptualization (AC) learners and those who impartially view the learning experience from many different perspectives are Reflective Observation (RO) learners (Kolb, 1984:30; Kolb, Rubin & Osland, 1991:59). Two independent dimensions become apparent from the four types of learning styles, active and passive type learning styles (Loo, 1996:529). This simplification of Kolb's inventory reveals that CE and AE styles reflect

experiential training, while AC and RO styles can be grouped together to represent vicarious training.

Vicarious Training. As the very definition of the word implies, vicarious training involves abstract thinking, conceptualization, attending seminars and classes, and reading on the subject without actually experiencing the task to learn (American Heritage Dictionary, 1996). Thus, reading literature and attending lectures on the goals of CS&P are examples of vicarious training. The formal training the USAF provides through classrooms and conferences also fits the classical definition of vicarious training.

Classroom style training has been used for centuries and continues to be the most popular style of teaching. This proven method of instruction significantly improves knowledge, agreement, self-efficacy, and adherence (Umble *et al.*, 2000:1218). For example, in a study of public health professionals participating in traditional classroom vaccine training; knowledge, agreement, and self-efficacy with regard to vaccination material were significantly increased over their levels before the course ($P < 0.001$) and maintained a higher level of knowledge three months later ($P < 0.001$) (Umble *et al.*, 2000:1221).

Although vicarious training is effective for easily evaluated information, such as multiple-choice exams, it does not capture some of the more complicated factors of successful training, such as real-world application of knowledge and skills (Bartels *et al.*, 2000: 198). A grade point average does not necessarily translate to ability to use knowledge in real-world settings.

Experiential Training. Experiential training has been defined as experiences that are client-centered and revolving around the notion that intellectual insight, understanding, skill acquisition, and growth/change motivation best occur in the context of active, engaging, challenging, and emotional learning experiences (Weaver, 1999). Experiential training is concisely defined as "learning by doing" (Clements, 1995). Bartels *et al.* (2000) found that skill-based (experiential) learning went beyond traditional classroom learning in providing a higher assessment of skill acquisition.

Experiential training is commonly viewed in the USAF as a quick and easy way for a new lieutenant to learn job skills and develop as a leader. "People tend to learn more when they are actively engaged in the learning process than when they are a passive bystander to learning—as they are in traditional lectures . . . " (Clements, 1995). Most commanders would agree that the best way to introduce a new lieutenant in the USAF organization is through a trial-by-fire that consists of active participation and learning through making mistakes. "On any new job, recent graduates will find it necessary to learn the ropes – the peculiarities of the particular company and its expectations of new workers" (Kolb, Rubin & Osland, 1991:5). Typical training tasks assigned to new lieutenants in civil engineering without any prior experience include managing a section of 20 plus people, running a multi-million dollar construction project, or leading a team of 50 engineers in the field. These actions envelop the lieutenant with experiences and allow learning to take place from mistakes that are certain to occur. Experiential training experiences have been commercialized in the business world to build teamwork

and relieve stress in the form of outdoor survival skills training and obstacle courses. They are planned to give executives the same experience of sensory overload in an unfamiliar environment, but designed to provide rewarding outcomes with positive learning emphasis.

Experiential Training Through the A-76 Study. The process of outsourcing or privatizing a function is commonly called an A-76 study. This daunting task requires command of the philosophy behind CS&P and knowledge of which factors contribute to successful implementation of effective contracts. Though the USAF has already outsourced many functions in the CE area, a new team is formed for each A-76 study by picking local people who have firsthand experience with the function being studied. The team is then given 18 months to conduct the cost comparison study and provide a recommendation for the Most Efficient Organization (MEO) for performing the function (OMB Circular No. A-76, 1999:10). The team has to quickly define the scope of the function, identify all costs associated with carrying out the function, examine bids from government and private agencies, and determine the MEO in the compressed timeline of 18 months or less. To do this successfully, the team must understand the goals of the CS&P program and understand how each decision they make satisfies those goals. Thus, the team is not only becoming intellectually aware of the CS&P program, but also practicing the theory first-hand through their decisions and actions during the study experience. Kolb and his fellow authors provide the following quote to provide historical acknowledgement of the power of experiential learning:

I hear and I forget
I see and I remember
I do and I understand
                    Confucius (Kolb, Rubin & Osland, 1991:xvii)

CS&P and Organizational Change

If "do more with less" is the DoD standard, then the corresponding mantra in

the business world is that "change is the only constant."

> By any objective measure, the amount of significant, often traumatic,
> change in organizations has grown tremendously over the past two
> decades. Although some people predict that most of the
> reengineering, restrategizing, mergers, downsizing, quality efforts,
> and cultural renewal projects will soon disappear, I think that is highly
> unlikely. Powerful macroeconomic forces are at work here, and these
> forces may grow even stronger over the next few decades. As a
> result, more and more organizations will be pushed to reduce costs,
> improve the quality of products and services, locate new opportunities
> for growth, and increase productivity. (Kotter, 1996:3)

Unfortunately, the military world is also afflicted by this disruption of the status quo

as taxpayers and lawmakers demand more accountability and efficiency with their

tax dollars. Imitating popular business practices from the globalizing economy, the

U.S. military, and in particular the United States Air Force (USAF), has adopted the

strategy of outsourcing business-like functions to the "Most Efficient Organization"

to save money. Needless to say, this strategy involves a large amount of change

in the existing organization, in the conduct of day-to-day business, and in the USAF

culture itself.

Kotter (1996), an organizational change expert and professor at the Harvard

Business School, explains that gaining understanding and commitment to a change

from an organization's employees results from successful communication of the

vision for the change. By providing employees the opportunity to understand the

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reasons for a change, people will more likely work to make the change successful. Building on this thought, if the USAF provides training to help its managers understand the reasons for CS&P, the managers would hopefully work harder to make CS&P successful.

Legitimacy

Kotter and Daly agree that there are two primary goals of communicating a change to employees, to increase the employee's understanding of the change, and to increase the employee's commitment by making the change decision seem fair or justified (Kotter, 1996:85; Daly, 1995:416). This perceived fairness and justification for a change constitute the definition for the legitimacy of the change. Perception of fairness is critical to the concept of legitimacy because the employee will support the change when they think it is a right and just decision. Even in the extreme cases of losing one's job because of a change, the affected employee can view the layoff as fair if proper communication is conducted. Naumann *et al.* (1998) found that layoff victims generally see layoffs as fair when management provides adequate explanation concerning the grounds for the layoff. Thus, fairness and communication of a change are important factors contributing to the legitimacy of the change. If employees understand and view the change as legitimate, they will likely be more committed to making the change succeed.

We have established that successful communication of a change aids in the employee understanding the reason for the change. However, to gain employee commitment to the change, it is obvious that the employee must see positive benefits from the change and perceive that the change is fair or justified. When

changes are explained to employees, they are more likely to view the outcomes of the changes and process behind the change decision as more fair (Daly, 1995:416). Adequate information about the change also improves attitudes toward a given change and helps to reduce employee anxiety and uncertainty (Wanberg & Banas, 2000:133). All of these positive feelings for the change invoked in employees help to bolster their commitment to the change.

Importance of Employee Commitment to Change. Why is it important for employees who carry out policy to buy in to a change? Buying in to a change is in effect feeling it is a legitimate change and committing to it. Ordering the change because management wants it that way is simple, but only half of the effort. The employees have to accept the change and then make it work in order to declare the change a success. Employees easily resist change if they do not buy in. Even worse, employees can work to sabotage a change in hopes of returning to the comfort of the status quo. "Change can be a struggle. Whenever we suggest a different way of doing things, someone is likely to cry, 'It will never work' or 'I don't have time for that,' or 'But this is the way we've always done it!' Such resistance can make it easy to give up on change" (Preston, 1999).

Unless committed, employees will acknowledge the change management wants but continue on with their own predisposed agendas and the change effort fails. Two common routes to change in the business world, reengineering efforts and mergers/acquisitions, demonstrate the difficulty of change in their track records. Management consultant Rick Maurer, president of Maurer & Associates in Arlington, Virginia, relates that only about one-third of major reengineering efforts

and 23 percent of mergers and acquisitions are successes in the United States (Maurer, 1996). This is especially true for changes introduced by outsourcing. The upheaval in the status quo requires that employees commit to the change and work hard to make it succeed or risk catastrophic failure of the entire organization since the "old way" of performing the function has been completely eliminated. Lau & Woodman (1995) found in their literature review that a highly committed individual might more readily identify with and accept organizational change efforts that are perceived as beneficial. Their review also revealed that on the other hand, a highly committed individual might be expected to strongly resist changes judged harmful to the organization. Thus, it is important for the organization to thoroughly convince employees that a change is needed and beneficial in order for that change to be implemented successfully. This acceptance and commitment to coping with a change is also important to the individual employee as well. Timothy Judge and other researchers found in their literature review that ineffective copers were more anxiety prone following organizational change, suggesting that the unstable employees would most likely be less effective in their jobs as well (Judge *et al.*, 1999:111).

Trust. Another factor contributing to an employee's commitment to change is the trust they place in their superiors. There are many dimensions of trust; however, we are concerned only with the relationship between an officer and their functional chain of command. If the employee trusts the superiors to base their decisions on positive outcomes for the employees and the organization, then

changes from those superiors should be supported. Rousseau and Tijoriwala researched that,

> Bies argues that employees who trust management are more likely to accept the managerial account as justifying the change. Trust can influence both the credibility of the actual reason (whether it is believed to be true) as well as belief in its legitimacy (whether it is justified). (Rousseau and Tijoriwala, 1999:515)

Many scholars have studied trust, but there is no real consensus on its true meaning. However, Rousseau and Sitkin cite a common theme in their research. "Regardless of the underlying discipline of the authors, from psychology/micro-organizational behavior to strategy/economics, confident expectations and a willingness to be vulnerable are critical components of all definitions of trust reflected in the articles" (Rousseau and Sitkin, 1998). From this, they also found that many other scholars also think that trust involves positive expectations. "Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (Rousseau and Sitkin, 1998).

Understanding Change. The previous paragraphs explain why a higher understanding, increased feelings of legitimacy, and commitment towards a change are important for a change to be successful. These perceptions are also important indicators of how well the employee understands the reasoning behind the change decision and the goals the change is supposed to achieve. If the employee understands why a change was enacted, the employee will likely perceive the benefits of the change better than an employee who does not understand the reasons for the change. The understanding can come from

training. "It is expected that a well-designed and well-conducted training program will lead to positive reactions from trainees, learning of the important material, behavior change on the job, and performance improvements" (Ostroff, 1991).

Why Go Through the Changes from Outsourcing?

The mission of the USAF is to defend the United States and protect its interests through aerospace power (USAF, 2000). To do this, the USAF maintains an extensive support structure to keep its planes in the air. Most of these support functions are also accomplished in the private sector, such as in airports and shipping companies. Thus, some of these functions may be susceptible to outsourcing in order to capitalize on the efficiency of the private sector. The money saved from a more efficient support structure, estimated to be $7–12 billion per year, could then be directed towards force modernization (Defense Science Board, 1996:2). In addition to the tremendous cost savings, the other benefits of outsourcing include: allowing the organization to focus on core competencies, freeing funds for strategic investment, gaining access to world-class capabilities and technology, sharing risks with contractors, shedding excess infrastructure, and improving service and performance (Defense Science Board, 1996:17; Edwards, 1998:96; Putrus, 1992:31; Quinn, 1999:9). Thus, the stakes are high for this change and the future success of the USAF could depend on the successful implementation of outsourcing.

The legal basis for competitively sourcing a function previously accomplished by the government comes from the Office of Management and

Budget (OMB) Circular No. A-76, first issued in 1955 and since revised numerous times. The latest revision in 1999, states:

> In the process of governing, the Government should not compete with its citizens. The competitive enterprise system, characterized by individual freedom and initiative, is the primary source of national economic strength. In recognition of this principle, it has been and continues to be the general policy of the Government to rely on commercial sources to supply the products and services the Government needs. (OMB Circular No. A-76, 1999)

What and When to Outsource

Competitive sourcing, or outsourcing, is contracting out non-military essential, non-inherently governmental functions to the most efficient provider. In competitive sourcing, the government retains everything about the function, except the labor to accomplish the function. Privatization is relinquishing all responsibilities of a function and its related infrastructure and transferring control to the private sector (USAF AFI 38-203), thereby, relinquishing ownership of a function. Thus, privatization is an extreme form of outsourcing. Privatization of utility systems and housing is currently being aggressively pursued in the USAF (Deputy Secretary of Defense, 1998). This study uses the terms outsourcing and CS&P interchangeably and are intended to encompass both competitive sourcing and privatization.

In addition to these critical conditions, Circular No. A-76 also provides the procedure for conducting the cost comparison in determining the winning organization for the outsourcing. The circular provides generic principles and procedures for developing the cost of in-house performance to the government and for developing the cost of the contract. This document also includes procedures for

computing the minimum conversion differential and calculating the financial

advantages to the government associated with government or contract

performance and the cost comparison decision. The circular even includes an

alternative cost comparison methodology for activities involving 65 in-house

positions or less at the time of study announcement (OMB Circular No. A-76

Revised Supplemental Handbook, 1999:17).

Outsourcing Exemptions

Though there are many functions accomplished for the USAF that are

similar to services that can be provided in the public sector, not all functions are

available for competitive sourcing or privatization. To be eligible for CS&P, the

function must be classified as a commercial activity and not as an inherently

governmental function.

> A commercial activity is one which is operated by a Federal
> executive agency and which provides a product or service that could
> be obtained from a commercial source. Activities that meet the
> definition of an inherently governmental function are not commercial
> activities. A commercial activity also may be part of an organization
> or a type of work that is separable from other functions or activities
> and is suitable for performance by contract. (OMB Circular No. A-76,
> 1999:2)

Once a function is classified as a commercial activity, it must also avoid being

classified as inherently governmental or else it remains as a function accomplished

by a government organization.

> An inherently governmental function is a function which is so
> intimately related to the public interest as to mandate performance by
> Government employees. . . . these functions include activities which
> require either the exercise of discretion in applying Government
> authority or the use of value judgment in making decisions for the
> Government. (OMB Circular No. A-76, 1999:2)

Thus, a function cannot be outsourced if it involves the discretionary

exercise of Government authority, is considered an act of governing, or involves

monetary transactions and entitlements, such as tax collection and the

administration of public trusts. Listed below are certain conditions that qualify the

function as inherently governmental.

1. National Defense or Intelligence Security - as designated by the Secretary of Defense (SecDef) or Director of Central Intelligence Agency.
2. Patient Care - when needed to maintain the quality of direct patient care.
3. Core Capability - may be warranted for certain functional areas.
4. Research and Development - as designated by the SecDef
5. No Satisfactory Commercial Source Available - if no private sector interest or no qualified bidders.
6. Functions with 10 or Fewer Positions - if contracting officer determines that commercial performance is unsatisfactory or reasonable prices cannot be obtained.
7. Meet Performance Standard - agencies may demonstrate that the activity meets or exceeds generally recognized industry cost and performance standards.
8. Lower Cost - if results of cost comparison demonstrate that in-house performance is less costly.
9. Temporary Authorization - performed in-house for up to one contract year if problems arise with contractor or contract. (OMB Circular No. A-76 Revised Supplemental Handbook, 1999:7)

CS&P & Outsourcing Goals

Concerning competition of services, it is the policy of the United States

Government to achieve economy and enhance productivity, retain governmental

functions in-house, and rely on the commercial sector to provide commercial

products and services (OMB Circular No. A-76 Transmittal Memorandum, 1999:1).

To conform to this policy, the USAF developed the CS&P program to implement

outsourcing for the USAF's 168 installations. The primary CS&P program goal is to

save money through competition and use those funds for force modernization. At the same time, secondary goals are to increase cost effectiveness and performance and allow remaining forces to focus on the core activities of the USAF (Deputy Chief of Staff - Plans and Programs, 2000:11). These goals reflect the main benefits of outsourcing in commercial industry. In addition to the cost savings, the benefits of outsourcing "include the opportunity to concentrate resources on core capabilities, greater access to innovative technologies and business practices, and improved service quality and responsiveness" (Defense Science Board, 1996:14).

The Extent of Outsourcing in USAF

Civil engineering outsourcing is being pursued at different levels at every USAF installation. Some bases have already awarded contracts for the entire civil engineer function, while others have only outsourced smaller services, such as asbestos testing or exterior painting. Nearly all bases have outsourced janitorial services and grounds maintenance. The privatization side is just as aggressive. The USAF inventory includes 168 installations, with 640 total utility systems. Out of the 640, 81 systems are already privatized, 79 are exempt, 49 are owned by others (such as host nation at an overseas location), and the remaining 431 are undergoing privatization analysis (USAF Privatization Branch, 2000:1). The USAF has already privatized 1,492 housing units at three bases (Lackland AFB, TX; Robins AFB, GA; and Dyess AFB, TX). Outsourcing is also widely practiced in other base support agencies. Contractors accomplish communications functions such as telephone switchboard and computer repairs at most bases. Other

outsourcing opportunities exist in other base support functions that are currently

performing commercial activities. Some of these opportunities are actually in

various stages of outsourcing. Listed below are examples of commercial activities

in the OMB Circular No. A-76.

1. Audiovisual Products and Services (Photography, microfilm, distribution)
2. Automatic Data Processing (programming, design, simulation)
3. Food Services (operation of cafeterias, vending machines)
4. Health Services (hospitals, dental, pharmacies)
5. Industrial Shops and Services (machine shops, equipment fabrication)
6. Maintenance, Overhaul, Repair, and Testing (aircraft components, vehicles)
7. Management Support Services (public relations, financial/payroll services)
8. Manufacturing, Fabrication, Processing, Testing, and Packaging
9. Office and Administrative Services (library, mail, translation)
10. Other services (laundry, training, laboratory testing)
11. Printing and Reproduction (printing and binding, blueprinting)
12. Real Property (construction, alteration, repair, landscaping)
13. Security (guard and protective services, privacy systems)
14. Special Studies and Analyses
15. Systems Engineering, Installation, Operation, Maintenance, and Testing
16. Transportation (motor pool operation, bus service, maintenance)
    (OMB Circular No. A-76 Transmittal Memorandum, 1999:Appendix A)

Future Outlook

Outsourcing opportunities are being identified throughout the USAF and

knowledge about CS&P is fast becoming a critical survival tool for civil engineers.

The aggressive CS&P program will study every civil engineer function and other

commercial activities at every installation. The stakes to CS&P success are

considerable; the cost savings are estimated to be $7–12 billion per year. These

funds will then be redirected towards force modernization and research and

development so that the USAF may retain its current edge against potential

adversaries (Defense Science Board, 1996:9A).

Summary of Literature Review

This chapter reviewed the history of outsourcing in the DoD and the USAF and why it has been chosen as the avenue for funding force modernization. The changes caused by outsourcing were paralleled with the current changes in the private sector. The training the USAF provides for outsourcing was discussed and compared to the two types of training, experiential and vicarious. Different factors contributing to a successful change were discussed, such as commitment, trust, legitimacy, and understanding of the change. These factors are important for the success of CS&P since the program is a change. Outsourcing in the USAF was examined and important aspects of policy and exemptions were reviewed. A deeper understanding of making outsourcing work today is critical since the future outlook for the USAF has not identified any other alternatives for obtaining cost savings. These cost savings are critical, as they will fund the modernization that will keep the USAF in its position as the most capable aerospace force in the world.

III. Methodology

This study hoped to discover if there was a difference in feelings toward CS&P based on the prior training and experiences of senior level officers and civilians in the USAF civil engineer. To test the hypotheses, a survey was developed to assess participation in training and experiences, general knowledge of CS&P, quality of information received, feelings of fairness, need for change, personal and organizational benefits, strength of perceived benefits, and support from upper management. The development and reliability of the items and scales used for these measures are discussed and a brief summary of the statistical procedures concludes this chapter.

Population

The survey was made available to officers and a limited number of senior civilians in USAF civil engineering. Official records indicated 730 officers fit the target population requirements. Of these, 547 officers were successfully contacted through electronic mail (email) and encouraged to participate in the web-based survey. The remaining 183 officers could not be contacted due to invalid email addresses, were in the process of moving, or were out-processing. A database for civilian equivalents in USAF civil engineering did not exist, so the original solicitation urged the officer to forward the letter to civilian equivalents in the officer's civil engineer organization. Thus, the original population for civilians could not be determined.

Sample

Of the 547 officers contacted, 143 responded for a response rate of 26 percent. A reminder email was sent nine days after the initial email; the sample size subsequently reached 242 officers for a response rate of 44 percent. Ninety-seven civilians also responded, providing a total sample size of 339 respondents. Figure III-1 compares the officer sample to the population. Detailed demographics are available in Appendix B.
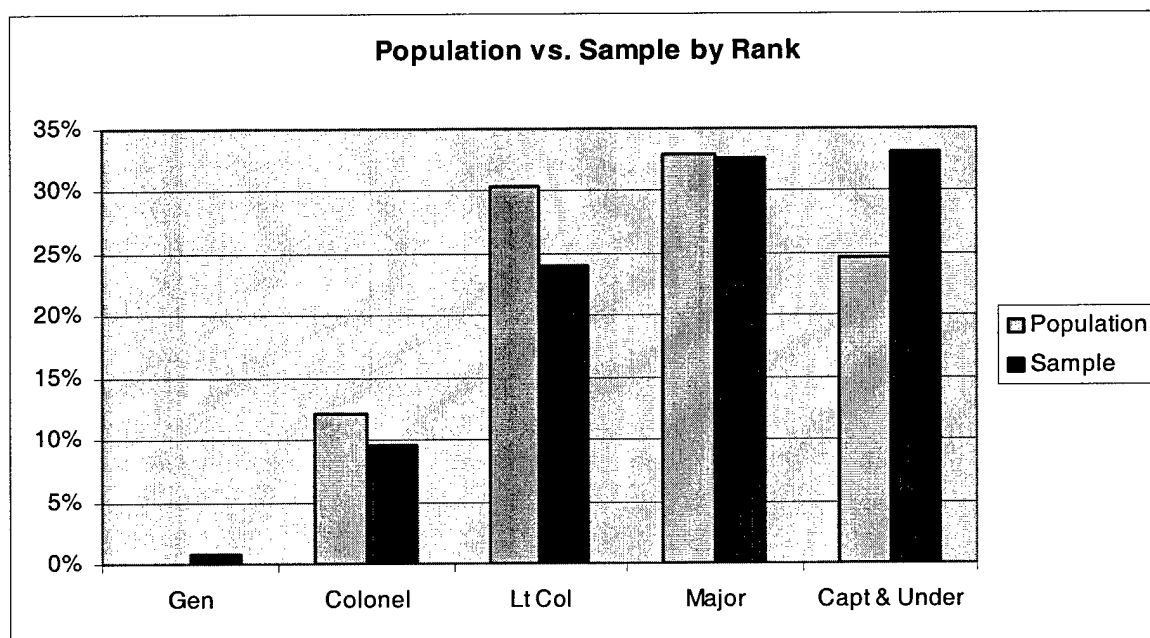

Figure III-1. CE Officer Population and Sample Comparison

The sample mostly reflects the population; however, it may slightly exaggerate the perceptions from the captain and under category and under-represent the opinions of Lt Colonels. Comparisons were not made for the civilian sample since no reliable civilian database could be accessed for the study.

Survey Design

The survey design consisted of developing a 54-item Likert-style questionnaire to measure eight constructs hypothesized to contribute to the understanding of change, feelings of legitimacy, and perceived benefits of CS&P. Participants responded to all questionnaire items by expressing their level of agreement on a six-point scale that ranged from strongly agree to strongly disagree; some of the questions were negatively worded. The eight constructs measured were general knowledge of CS&P, quality of information, fairness, need for change, personal benefits, organizational benefits, perceived benefits from outsourcing, and support from management. The subjects were informed by a brief email about the purpose of the survey and provided a link to the survey web site. The first page of the web site notified the reader about the privacy policy and provided instructions on how to participate in the survey (see Appendix A for the survey). The second page contained 54 Likert-style items concerning the nine measurements and requested demographic information. A comment box was also provided for additional feedback. Although a survey is generally regarded as the most obtrusive, highly reactive form of measurement, it was the method chosen because of time and cost constraints as well as the large population (Dooley, 1995:101).

Measuring General Knowledge. General knowledge about CS&P was measured with four items developed by the author to gauge the subject's understanding of the A-76 process and the purpose of the CS&P program. The course director for the outsourcing and privatization classes at AFIT was consulted

during the development of these items. For example, one of the questions asked if the subject understood who the major players are in an A-76 study.

Measuring Quality of Information. Quality of Information (QOI) was measured with six items derived from a study by Miller, Johnson and Grau (1994). These researchers were examining factors contributing to the openness of employees to participate in a change and found the scales to be internally consistent (Miller, Johnson & Grau, 1994:59). Cronbach's α is commonly used to indicate the reliability of the items in assessing the construct. Miller, Johnson, and Grau found their quality of information items to have an $\alpha = 0.86$, well above the 0.7 margin generally accepted as the cutoff. The six items were reworded to gauge the usefulness and timeliness of the information the subject was provided on outsourcing. Wanberg & Banas also used the QOI items in their study of openness to change and found the items to be reliable, $\alpha = 0.87$ (Wanberg & Banas, 2000:142). For example, two of the questions asked if the subject had received timely information about CS&P and the right amount of information regarding CS&P.

Measuring Fairness. Fairness was assessed using five items derived from Daly's scales for justification ($\alpha = 0.77$), procedural fairness ($\alpha = 0.88$), and outcome fairness ($\alpha = 0.73$) in his 1995 study (Daly, 1995:424). Literature reviewed in Chapter 2 also influenced the development of the five items. Daly's items were reworded to reflect fairness in relation to CS&P. The items queried if

the subjects felt that an A-76 study was a fair way to implement CS&P or if they felt that CS&P overall was good for the USAF.

Measuring Perceived Benefits. Seven items measured the perceived benefits of the CS&P program. These benefits were derived from literature reviewed in Chapter 2 and from the Defense Science Board Task Force on Outsourcing and Privatization publication (Defense Science Board, 1996:17). Two of these items asked if the subject thought the CS&P program overall would lead to reduced operating costs and if CS&P would improve overall services and performance.

Measuring Need for Change, Personal and Organizational Benefits, and Management Support. The remaining four constructs were measured with 32 items from an unpublished doctoral dissertation developing a scale to assess readiness for change (Holt, 2001). These items were reworded to reflect the changes facing the USAF from CS&P. Eight items were used to measure the perceived need for change. For example, one of the items asked if the subject thought there were real business needs that made outsourcing necessary. The personally beneficial construct consisted of nine questions. One of these items was negatively worded and asked the subject if outsourcing would limit the subject's civil engineering future in the USAF. Six items measured the organizationally beneficial construct. For example, the subject indicated agreement if they thought outsourcing matched the priorities of the USAF. Management support was evaluated with nine items and included questions

concerning the subject's direct supervisor and perceptions of senior USAF leaders. For example, the subject was asked if they thought senior leaders had served as role models for the CS&P program and if the subject's supervisor had stressed the importance of CS&P.

Statistics

Most of the calculations performed in this research were accomplished with Statistical Package for the Social Sciences (SPSS) for Windows, Release 10.0.05, Standard Version, in conjunction with Microsoft Excel 2000. A simple exploratory factor analysis was performed to ensure that the items were correctly measuring the constructs. Validated measures that were derived from published sources were not included in the factor analysis. Due to the high correlations of all the constructs (see Table IV-2), if all the measures were included, the factor analysis would mask some of the components. Scale reliabilities were also calculated in SPSS to ensure consistency of the construct measure. Simple averages were then computed for the valid constructs against the different types of training experiences. An analysis of variance (ANOVA) helped to determine if the differences between groups were significant. ANOVA was also used to determine if other grouping variables were contributing to differences.

Factor Analysis. Factor analysis reveals whether the items measure the intended construct or instead measure other construct(s) (Dooley, 1995:93). The items for general knowledge, need for change, personal benefits, organizational benefits, and management support were analyzed together. Some items were

discarded due to weak loadings on a construct or multiple construct loadings. The factor analysis with the final items included in the study is presented in Table III-1. The components represent the constructs and the Q followed by a number indicates the item numbers in the survey. The numbers in the table represent the partial correlation between the component and the item.

The factor analysis (Table III-1) confirmed that the general knowledge (KNOW) items defined a common factor, Component 2. Component 1 was loaded with items from organizational benefits and need for change. Component 3 loaded with items from management support that contained references to senior USAF leaders. Component 4 loaded with personal gain items from the personally beneficial construct. Component 5 loaded with management support items that referenced supervisors and Component 6 loaded with two items from the personally beneficial construct that mentioned personal future in the USAF and civil engineering. Several items were eliminated from various components due to multiple loadings on components. This scale refinement resulted in the final components represented in Table III-1 Factor Analysis Loadings.

The factor analysis found six components from the five that were input. The factor analysis lumped organizational benefits (OB) and need for change (NFC) together. The analysis split the management support measure in half, revealing separate significant loadings for management support from supervisors (MSSUP) and support from senior USAF leaders (MSSRL). The factor analysis also exposed that the personally beneficial construct actually measured personal gain (PERGAIN) and personal future (PERFUT). Including the three constructs that

34

were not input into the factor analysis, a total of nine constructs were used to test the hypotheses.

Table III-1. Factor Analysis Loadings

Measure	Item	Component					
		1	2	3	4	5	6
OB	Q40	.880					
OB	Q41	.868					
NFC	Q27	.847					
OB	Q43	.820					
OB	Q42	.818					
NFC	Q23	.807					
NFC	Q24	.794	.211				
NFC	Q30	.791					
OB	Q45	.754					
KNOW	Q2		.871				
KNOW	Q1	-.208	.801				
KNOW	Q9	.241	.644				
KNOW	Q10		.621			.273	
PERGAIN	Q31			.819			
PERGAIN	Q33			.803			
PERGAIN	Q34			.684			
MSSRL	Q50				.927		
MSSRL	Q49				.916		
MSSUP	Q51					.857	
MSSUP	Q52					.837	
PERFUT	Q37						.896
PERFUT	Q35						.780

Extraction Method: Principal Component Analysis
Rotation Method: Promax with Kaiser Normalization
Rotation converged in 6 iterations

Reliability of the Constructs. In addition to performing the factor analysis, the measure items were also checked for reliability. Reliability of a construct is the degree of consistency between the items measuring that construct (Hair *et al*, 1998:118). According to Hair, Cronbach's alpha is the most widely used measure of reliability. This measure ranges from 1 for a perfect measure to 0 for no

relationship. The generally agreed upon lower limit for Cronbach's alpha is 0.70, although it may decrease to 0.60 in exploratory research (Hair *et al*, 1998:118; Nunnally & Bernstein, 1994:265). Table III-2 reports the Cronbach's alpha for the nine identified constructs, calculated in SPSS.

Table III-2. Reliability of Measures

Construct	Cronbach's α
General Knowledge	0.7383
Quality of Information	0.9411
Fairness	0.8667
Perceived Benefits	0.8950
Need for Change/Organizational Benefits	0.9372
Management Support – Sr. Leadership	0.8616
Management Support – Supervisor	0.7328
Personal Benefits – Personal Gain	0.7130
Personal Benefits – Personal Future	0.6886

Analysis of Variance (ANOVA).   Analysis of Variance (ANOVA) techniques reveal if the differences in means are significant between groups based on a dependent variable (Hair *et al*, 1998:332). In ANOVA, small significance values (<0.05) of the F-test indicate group differences (Devore, 1995:396). Independent variables were created for each of the constructs from their contributing items based on the factor analysis. These independent variables were simply the averages for the items. The dependent variable was the prior training experience, either Experiential Training Only, Vicarious Training Only, Both Types of Training, or Neither Type of Training. A Bonferroni Post Hoc Test was also selected in SPSS to help determine which groups differed significantly. Finally, plots were graphed to visually display group differences for each of the constructs. For

discussion purposes, ANOVA tests were also run for education level, rank, military or civilian, and time in service for comparison and are presented in Appendix F.

Summary of Methodology

The potential population was presented and compared to the final sample. The survey design measured nine constructs: general outsourcing knowledge, quality of information received, fairness, perceived benefits, organizational need for change, management support from senior USAF leaders, management support from supervisors, personal gain, and personal future outlook in face of outsourcing. These constructs were averaged and compared between groups that had only experiential training, only vicarious training, both types of training, and neither type of training. The statistics used to validate these measures were discussed, along with methods for analyzing significant differences between the differently trained groups.

IV. Results and Discussion

Chapter 3 discussed the development of the measures and the statistical methods applied. This chapter summarizes the results from the statistical methods and interprets the results. The significant differences between groups are discussed and implications are derived from the discussion.

Correlation of Variables

The nine constructs were input into SPSS and resulted in the following descriptive statistics shown in Table IV-1. The means for the measures correspond to the six point Likert scale: 1 – Strongly Disagree, 2 – Moderately Disagree, 3 – Slightly Disagree, 4 – Slightly Agree, 5 – Moderately Agree, and 6 – Strongly Agree.

Table IV-1. Descriptive Statistics

Measure	Mean	Std. Dev.	N
Knowledge (KNOW)	4.3595	.9908	331
Quality Of Information (QOI)	3.6754	1.1501	326
Fairness (FAIR)	2.9920	1.1535	324
Perceived Benefits (PERC BEN)	2.6266	1.0443	329
Organizational Need For Change (ONFC)	3.0442	1.0658	329
Mgt Support – Sr Leadership (MS SRL)	3.7515	1.1762	330
Mgt Support – Supervisor (MS SUP)	3.1753	1.1179	328
Personal Gain (PER GAIN)	2.4321	1.0268	334
Personal Future (PER FUT)	3.2946	1.3437	336

The resulting correlation matrix is shown in Table IV-2, with boldfaced numbers representing the alpha of the measure. The measure names were abbreviated and correspond to the descriptive statistics in Table IV-1 above. These abbreviations are also used in other tables in this section.

Table IV-2. Correlation Matrix

Measure		KNOW	QOI	FAIR	PERC BEN	ONFC	MS SRL	MS SUP	PER GAIN	PER FUT
KNOW	Correlation	0.7883								
	Sig									
	N	331								
QOI	Correlation	.598**	0.9411							
	Sig	.000								
	N	322	326							
FAIR	Correlation	.352**	.307**	0.8667						
	Sig	.000	.000							
	N	319	314	324						
PERC BEN	Correlation	.194**	.192**	.792**	0.8950					
	Sig	.000	.001	.000						
	N	323	317	317	329					
ONFC	Correlation	.182**	.143*	.787**	.831**	0.9372				
	Sig	.001	.011	.000	.000					
	N	323	318	317	321	329				
MS SRL	Correlation	.138*	.136*	.055	.066	.009	0.8616			
	Sig	.013	.015	.329	.237	.871				
	N	324	319	317	321	322	330			
MS SUP	Correlation	.365**	.372**	.260**	.259**	.202**	.301**	0.7328		
	Sig	.000	.000	.000	.000	.000	.000			
	N	323	319	318	319	320	323	328		
PER GAIN	Correlation	.140*	.200**	.318**	.330**	.320**	.059	.163**	0.7130	
	Sig	.011	.000	.000	.000	.000	.292	.003		
	N	328	322	320	324	326	326	324	334	
PER FUT	Correlation	.183**	.208**	.167**	.181**	.212**	.015	.172**	.252**	0.6886
	Sig	.001	.000	.003	.001	.000	.790	.002	.000	
	N	329	324	322	326	327	328	326	333	336

** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).

The high incidence of significant correlations among the constructs indicates that the measures are associated with each other (Dooley, 1995: 328). The factor analysis (Table III-1) was able to discern between the measures despite the high correlations, indicating that the scales were adequate in measuring different constructs closely related to each other.

Homogeneity of Variances

One-way ANOVA assumes that the variances of the groups are all equal. To test this assumption, the Levene test for homogeneity of variances was performed with the results shown in Table IV-3. The significance value exceeds 0.05 for almost all of the constructs, suggesting that the variances for the constructs are equal and the ANOVA assumption is justified. The only exception was quality of information (0.016); organizational need for change (0.048) rounds up to the significance value of 0.05.

Table IV-3. Levene Test for Homogeneity of Variance

	Levene Statistic	df1	df2	Sig.
KNOW	.841	3	327	.472
QOI	3.503	3	322	.016
FAIRNESS	1.246	3	320	.293
PERCBEN	.298	3	325	.827
ONFC	2.663	3	325	.048
MSSRL	1.678	3	326	.172
MSSUP	1.253	3	324	.290
PERGAIN	1.599	3	330	.189
PERFUT	.998	3	332	.394

ANOVA Results

The ANOVA test results are presented in Table IV-4 and indicate whether measure differences between the groups were significant. The subjects were sorted into groups that had only experiential training, only vicarious training, both types of training, and neither type of training. Small significance values (<0.05) indicate group differences. Significant group differences were not detected in fairness (0.055), senior leader support (0.918), supervisor support (0.080), personal gain (0.809), and personal future (0.522).

Significant differences between groups are discussed in length later in this chapter. While not statistically significant, possible explanations for group differences in the fairness, senior leader support, supervisor support, personal gain, and personal future constructs are discussed with their means plots following the Bonferroni Comparison below.

Table IV-4. ANOVA Test Results

		Sum of Squares	df	Mean Square	F	Sig.
KNOWLEDG	Between Groups	33.209	3	11.070	12.450	.000
	Within Groups	290.758	327	.889		
	Total	323.968	330			
QOI	Between Groups	29.595	3	9.865	7.936	.000
	Within Groups	400.297	322	1.243		
	Total	429.892	325			
FAIRNESS	Between Groups	10.057	3	3.352	2.556	.055
	Within Groups	419.722	320	1.312		
	Total	429.779	323			
PERCBEN	Between Groups	10.294	3	3.431	3.210	.023
	Within Groups	347.379	325	1.069		
	Total	357.673	328			
ONFC	Between Groups	12.779	3	4.260	3.848	.010
	Within Groups	359.774	325	1.107		
	Total	372.554	328			
MSSRL	Between Groups	.701	3	.234	.168	.918
	Within Groups	454.423	326	1.394		
	Total	455.124	329			
MSSUP	Between Groups	8.439	3	2.813	2.277	.080
	Within Groups	400.231	324	1.235		
	Total	408.670	327			
PERGAIN	Between Groups	1.027	3	.342	.323	.809
	Within Groups	350.046	330	1.061		
	Total	351.073	333			
PERFUTUR	Between Groups	4.080	3	1.360	.752	.522
	Within Groups	600.751	332	1.809		
	Total	604.830	335			

Bonferroni Post Hoc Comparison

The Bonferroni Post Hoc comparison method was used to determine which groups differ (subjects were grouped into experiential only, vicarious only, both types of training, or neither type). The Bonferroni assumed equal variances for all

constructs, which was shown to be a valid assumption in Table IV-3 with the exception of quality of information. The Bonferroni results for the general knowledge construct below (Table IV-5) lists the pair-wise comparisons of the group means for the Bonferroni procedure. Results for the other construct Bonferroni comparisons are located in Appendix C. A 95% confidence interval was constructed for each difference. If this interval contained zero, the two groups did not differ. For example, the table below indicates that knowledge between experiential only and vicarious only groups did not differ. However, differences were detected between both types of training – experiential only, vicarious only – neither, and both types of training – neither groups. These differences are discussed within the means plot section below.

Table IV-5. Bonferroni Comparison of General Knowledge

Dependent Variable	(I) Training	(J) Training	Mean Difference (I – J)	Std. Error	Sig.	95% CI Lower Bound	95% CI Upper Bound
Knowledge	Experiential Only	Vicarious Only	-0.2429	0.1815	1.000	-0.7247	0.2389
		Both Types	-0.5384*	0.1712	0.011	-0.9928	-0.0840
		Neither	0.2550	0.1504	0.546	-0.1443	0.6542
	Vicarious Only	Experiential Only	0.2429	0.1815	1.000	-0.2389	0.7247
		Both Types	-0.2955	0.1694	0.492	-0.7451	0.1541
		Neither	0.4978*	0.1484	0.005	0.1040	0.8917
	Both Types	Experiential Only	0.5384*	0.1712	0.011	0.0840	0.9928
		Vicarious Only	0.2955	0.1694	0.492	-0.1541	0.7451
		Neither	0.7934*	0.1355	0.000	0.4336	1.1532
	Neither Type	Experiential Only	-0.2140	0.2157	0.546	-0.6542	0.1443
		Vicarious Only	-0.3207*	0.2041	0.005	-0.8917	-0.1040
		Both Types	0.3789*	0.1796	0.000	-1.1532	-0.4336

* The mean difference is significant at the 0.05 level.

<u>Means Plots</u>

The Bonferroni table provided a definitive, albeit slightly confusing, representation of the differences between the groups. The following means plots provide a graphical snapshot of the differences and make it easier for the reader to observe the differences between groups. However, inferences drawn from the plots must be compared with the Bonferroni table to ensure that the differences are significant. The following plots were zoomed in to show differences among the means for the different groups, so the y-axis does not stay constant throughout this section. The y-axis represents the Likert levels of agreement (1 – strongly disagree to 6 – strongly agree).

<u>General Knowledge Measure</u>. Figure IV-1 is the means plot for the general knowledge construct. Note the spike in self-reported agreement in knowledge of outsourcing for individuals who participated in both types of training. From the Bonferroni table, the groups that had significant differences between them in general knowledge of outsourcing were: experiential and both types, vicarious and neither, and both types and neither. The arrows between the points indicate the statistical differences. This provided evidence those individuals that received both types of training self-report higher understanding than those with only experiential training or those with no training. The vicarious training may be more effective in teaching the fundamentals of outsourcing than the experiential learning individuals undertake on their own when faced with participating in an A-76 study. All groups had means above 4, indicating at least slight agreement with possession of general knowledge of CS&P. The difference between experiential only and vicarious only

was not statistically different, indicating that the type of training did not significantly

increase knowledge. However, the amount of training did increase general
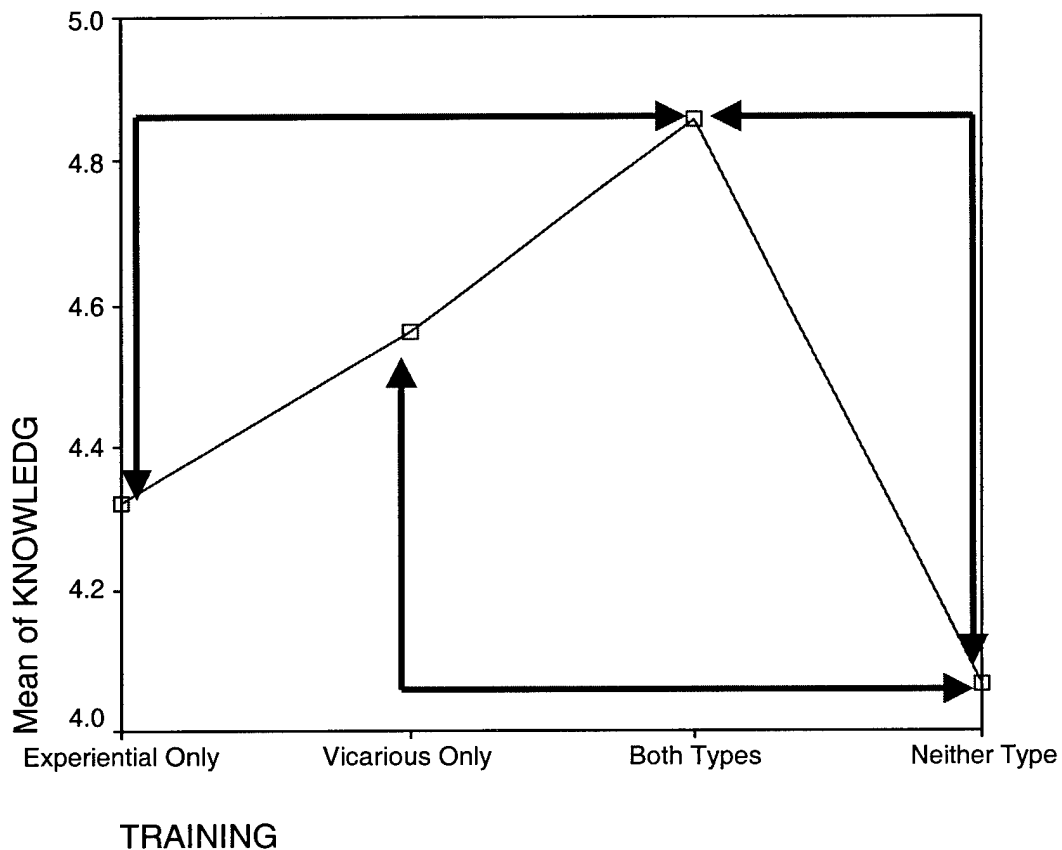
knowledge.

Figure IV-1. Means Plot - General Knowledge

Quality of Information Measure. Figure IV-2 presents the differences in

perceived quality of information, with those between the neither group and both

vicarious only and both types statistically significant. These differences could

indicate that either those who had no training were not receiving enough

information, information of low quality, or just those who attended vicarious training

felt better about the information they received. The mean of 4.06 for those

receiving both types of training indicated that they slightly agreed that they received accurate, timely, and consistent information about CS&P, reflecting the possible explanation from the previous means plot that the differences may come from the amount of training, not which type of training. The other groups all had means between 3 and 4, ranging from feeling slight disagreement to slight agreement respectively.
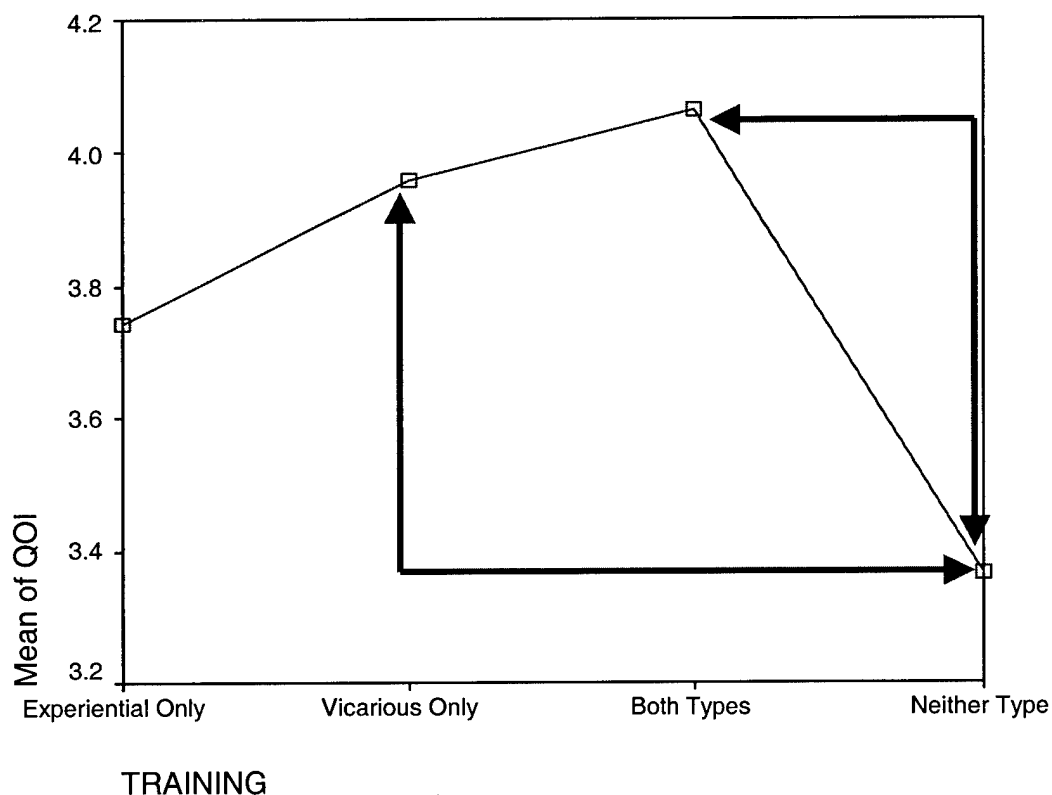

Figure IV-2. Means Plot - Quality of Information

Fairness Measure. The means plot for fairness in Figure IV-3 revealed that after actually experiencing an A-76 study, individuals felt that the CS&P program was less fair than those that had only learned about CS&P in class or had no formal training at all. Individuals who had both types of experience and neither

type of experience differed significantly, inferring that individuals that have vicariously learned what outsourcing should be, then actually experienced the outsourcing, reported that they perceived the CS&P program to be less fair than those who were not trained on the program. Another interpretation is that those with only common knowledge tended to see CS&P as a more fair method of achieving cost savings while trained individuals observed that this method is a less fair way of implementing cost savings. All groups had means ranging from 2 (moderate disagreement) to 3.15 (slight disagreement).
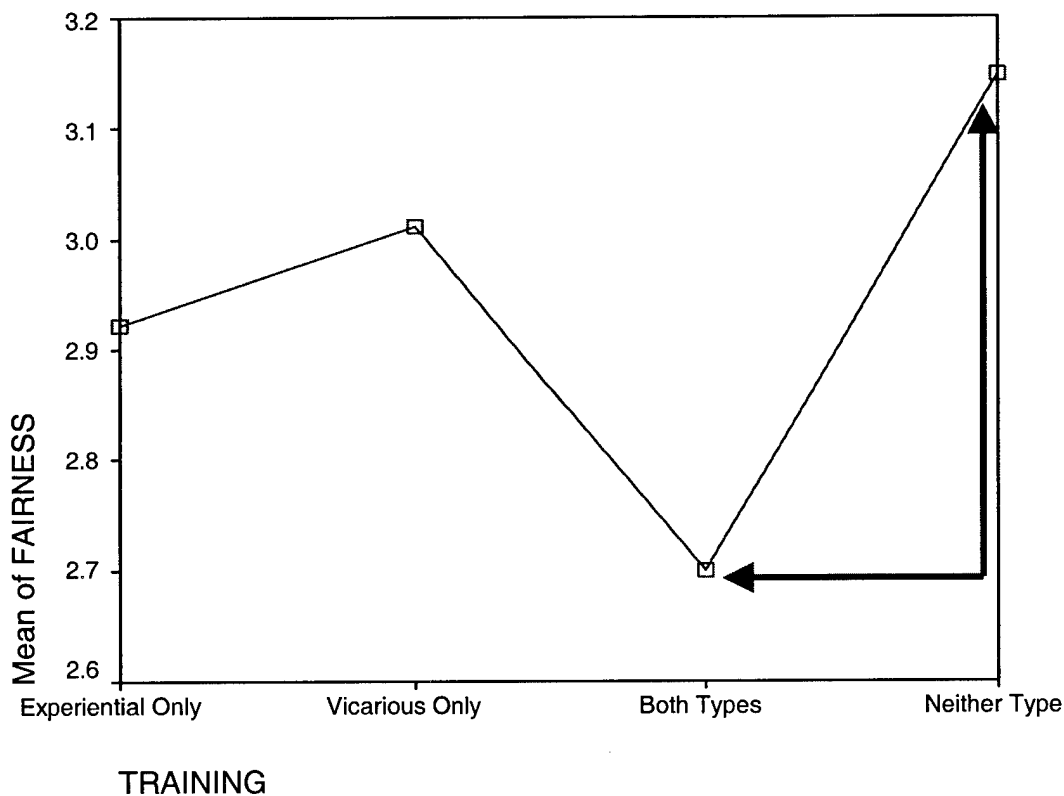
Figure IV-3. Means Plot - Fairness

Perceived Benefits Measure. This measure was derived from the literature review and attempted to measure the aggregate benefits. Agreement with the

seven identified benefits from CS&P was averaged. The Bonferroni table

identified only one difference as significant, the one between individuals receiving

both types of training and those with neither. As with fairness, it appears that

people having only common knowledge of CS&P see the program as more

beneficial, while those that have been trained on it and actually experienced it saw

it in a more negative way. Subjects with only experiential training agreed slightly

less with the listed benefits than those with only vicarious training or no training at

all.
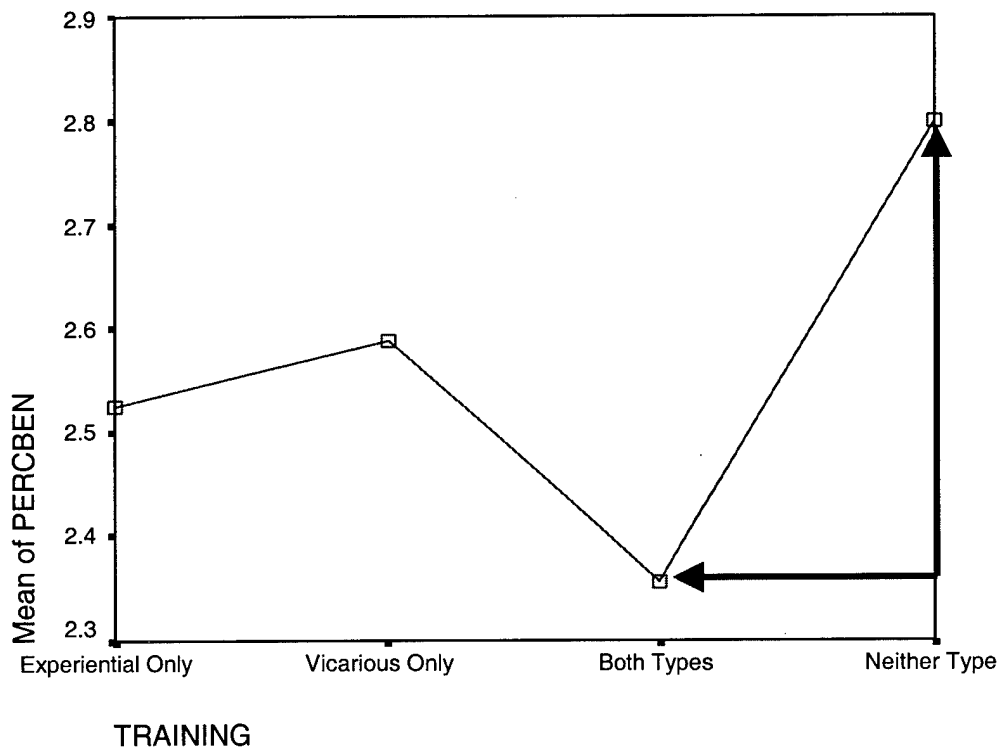
Figure IV-4. Means Plot - Perceived Benefits

Despite the benefits touted in the literature, the survey respondents overall

did not agree that these benefits are, or would be realized by, the USAF. For

instance, the overall mean for all groups in perceived benefits was 2.62, midway between moderately and slightly disagree. When examined at the individual item level, the perceived benefits means are even more condemning. Appendix D lists the perceived benefits items and their respective means plots. For example, item 16 (Q16) asked if the subject agreed that the CS&P program would reduce operating costs. Figure IV-5 shows that people with experience in outsourcing disagreed more with the concept of reduced operating costs than those with only vicarious or no training, though no statistically significant differences were found.
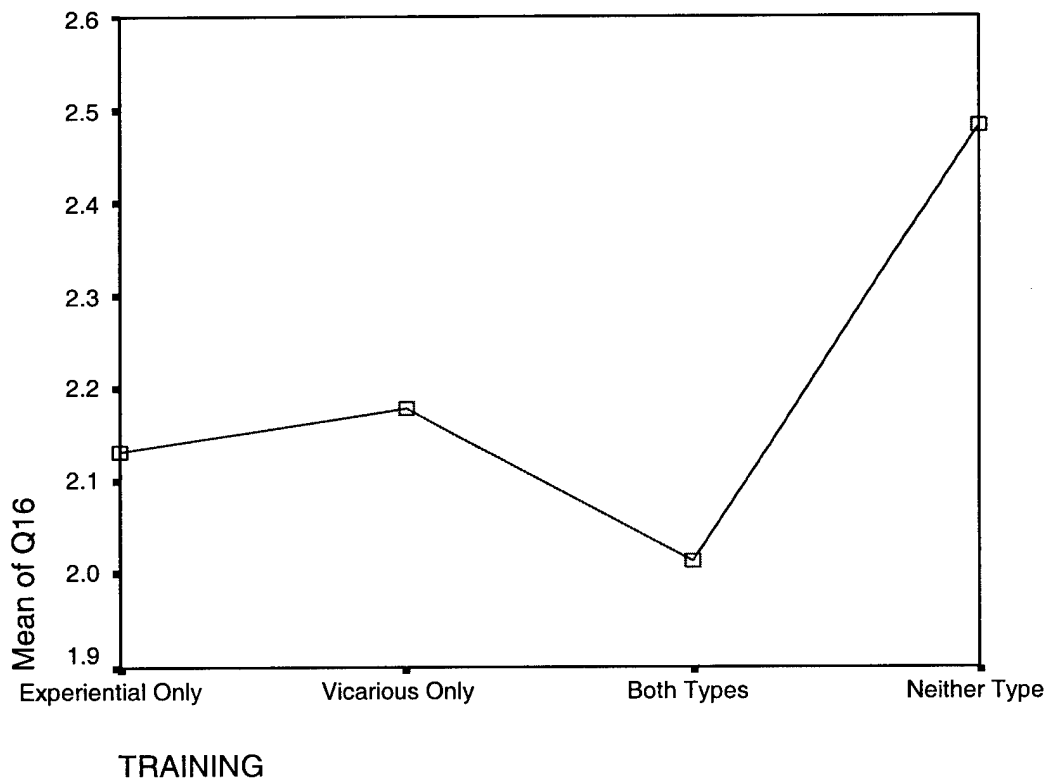
Figure IV-5. Means Plot - Item 16 (Reduced Operating Costs)

The means plot for item 22 (Q22) in Figure IV-6, represents the subjects' perceptions regarding whether CS&P would improve overall services and

performance. The means plot indicates that people who had experience only disagreed less with this statement than all other groups. Subjects with no training of any type disagreed slightly more than those with only experiential training. This could be interpreted that overall feelings toward CS&P concerning service and performance expectations are slightly negative, regardless of training. The negative feelings increase with vicarious training, compounding the negative feelings of those with both types of training, though no statistically significant differences were found.
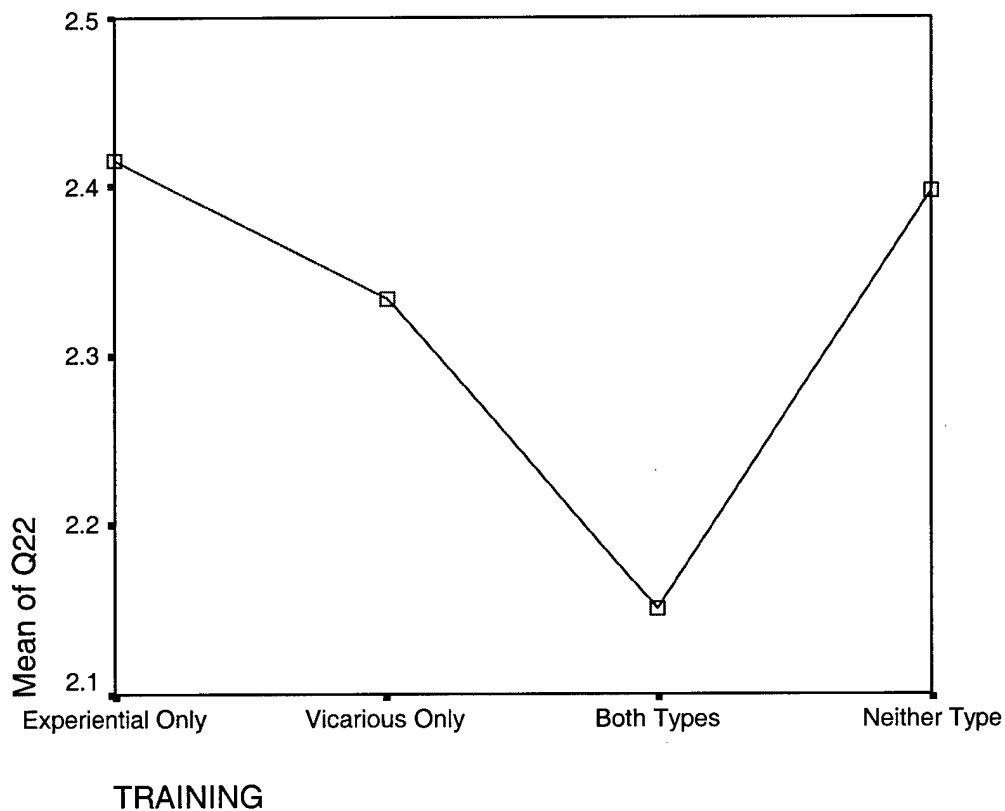
Figure IV-6. Means Plot - Item 22 (Improve Services and Performance)

The noticeable dip in Figure IV-6 at the both types group possibly indicates that the vicarious training negatively affects the subjects. Thus, learning the theoretical benefits of outsourcing and then experiencing it or vice versa results in far more negative feelings than only having one type of training or none at all. This leads to question if a discrepancy exists between vicarious training and actual experience. The possible discrepancy is further discussed in Chapter V.

Organizational Need for Change Measure. Based on the results from the factor analysis (Table III-1), the measures for organizational benefits and need for change were combined into one construct, organizational need for change. This combination satisfies the purposes of this study because both measures are similar. Organizational benefit items asked if the USAF would benefit from CS&P and need for change items asked if the USAF needed to outsource and privatize. All groups reported means around slight disagreement to slight agreement in Figure IV-7. Those with no training or experience agreed that change was needed more than subjects that had learned about CS&P and subjects that had actually experienced outsourcing. As in the previous plot, there is a noticeable dip at individuals with both types of training, possibly representing a discrepancy in the types of training.
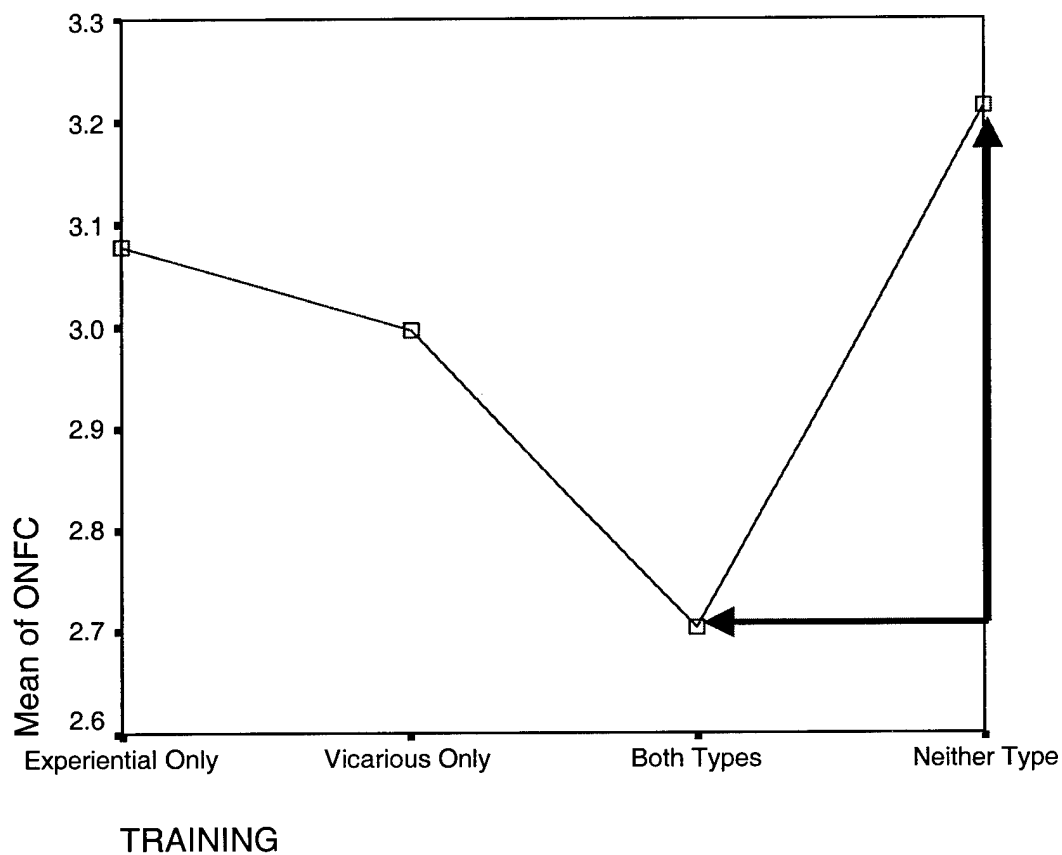
3.3 —

3.2 —

3.1 —

3.0 —

2.9 —

2.8 —

2.7 —

2.6 —

Mean of ONFC

Experiential Only   Vicarious Only   Both Types   Neither Type

TRAINING

Figure IV-7. Means Plot - Organizational Need for Change

Management Support – Senior Leadership Measure. There were no

statistically significant differences between groups for management support from

senior leadership. However, the means plot (Figure IV-8) does show that those

with experience feel that senior leadership is behind CS&P more than those who

have only vicarious training and no training. Some of the subjects provided

comments at the end of their surveys to indicate that support from their major

commands, Air Staff, or other agencies were crucial to the outsourcing processes

they were involved in. Thus, this support may explain why the experientially

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trained subjects agreed more than those with only vicarious or no training that they

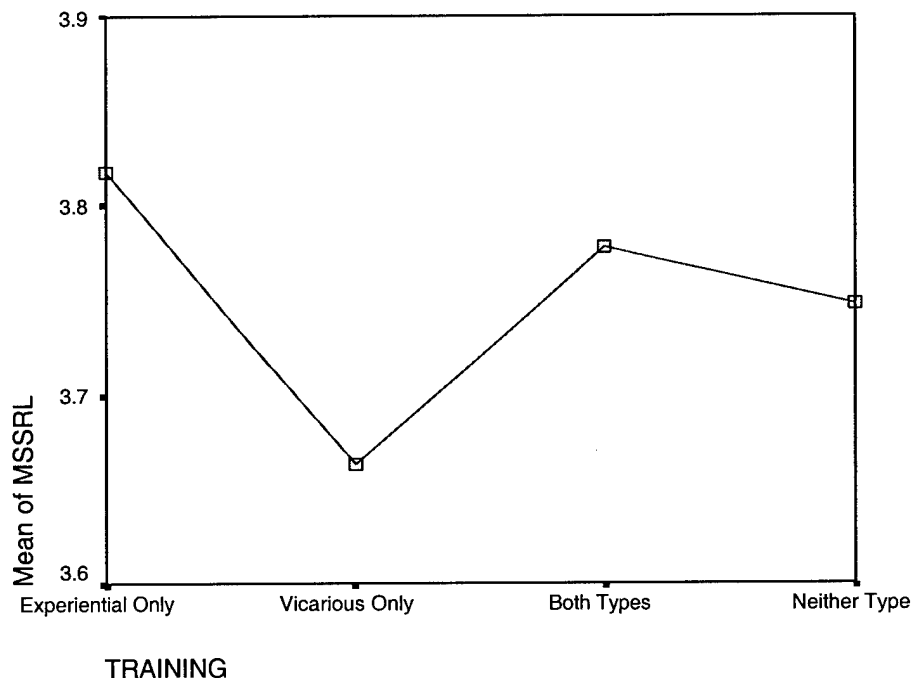had management support from senior leadership.

Figure IV-8. Means Plot - Management Support (Senior Leadership)

Management Support – Supervisor Measure. As with support from senior

leadership, no statistically significant differences exist between groups regarding

supervisor support. However, the means plot (Figure IV-9) indicates that subjects

with vicarious training reported higher supervisor support. A possible explanation

might be that the vicarious training provided literature on how to involve your

supervisor or explained what supervisors can do to help in the CS&P process. A

more likely explanation resides in the fact that individuals require their supervisors'

permission to attend vicarious training or were sent to attend vicarious training by

their supervisor. Thus, the role the supervisor plays in vicarious training may have

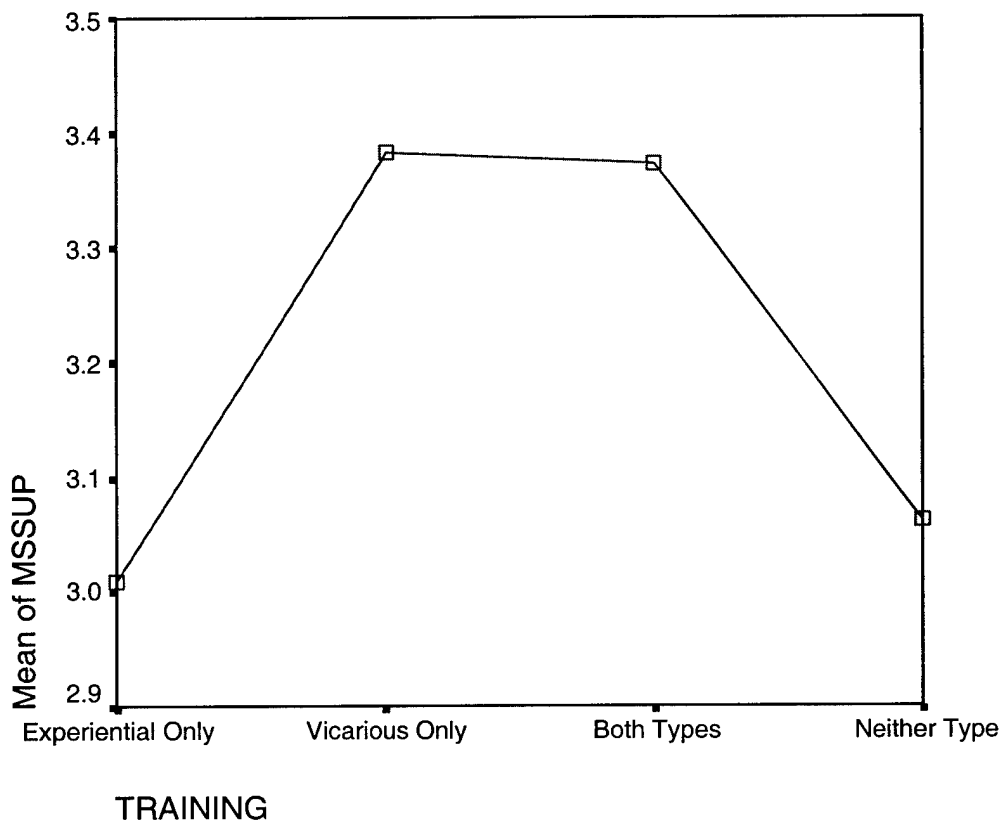positively affected the subjects' perceptions on management support from supervisors.

Figure IV-9. Means Plot - Management Support (Supervisor)

Personal Benefit – Personal Gain Measure. No statistically significant differences were identified between groups for personal gain. These items were originally intended to measure the subject's perception of personal benefits from outsourcing such as increased career opportunities or if outsourcing would make their job easier. After scale refinement from the factor analysis, these items measured personal gain from CS&P, mainly career complication, new career opportunities, and financial gain. The subjects with both types of experience had a worse outlook on their personal duties with CS&P than did the other groups, as

displayed in Figure IV-10 below. This reflects the discrepancy that may exist

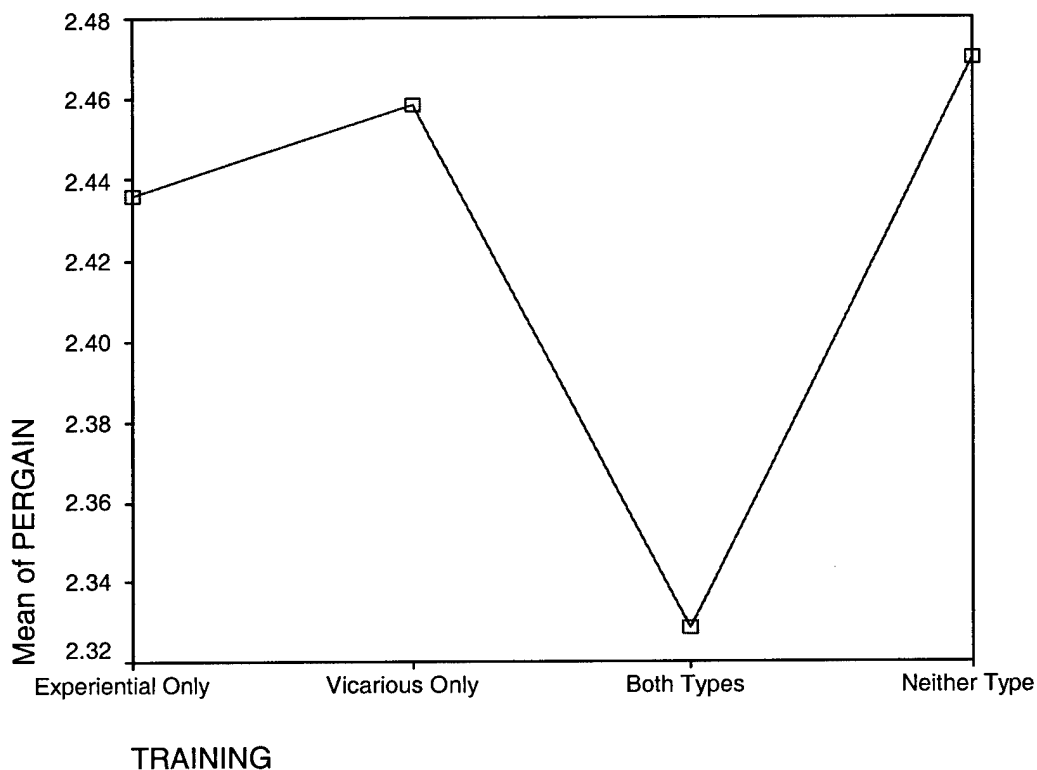between the vicarious and experiential training individuals receive.

Figure IV-10. Means Plot for Personal Gain Measure

Personal Benefit – Personal Future Measure. Like the personal gain

measure, this scale was identified from the factor analysis as a separate

component of the personal benefit measure and no statistically significant

differences were identified between groups. The items were concentrated on the

subject's career outlook if and when the USAF outsourced civil engineering.

Interpretation of Figure IV-11 indicated that those that had both types of

experiences were more positive about their outlook than were the other groups.

This indicated that the literature and other vicarious training might have painted a

worse outlook than did the experiential training. Thus, after expecting a bleak future from class, the subjects experienced an outsourcing or vice versa and found out that their future in CE was not as bad as expected.
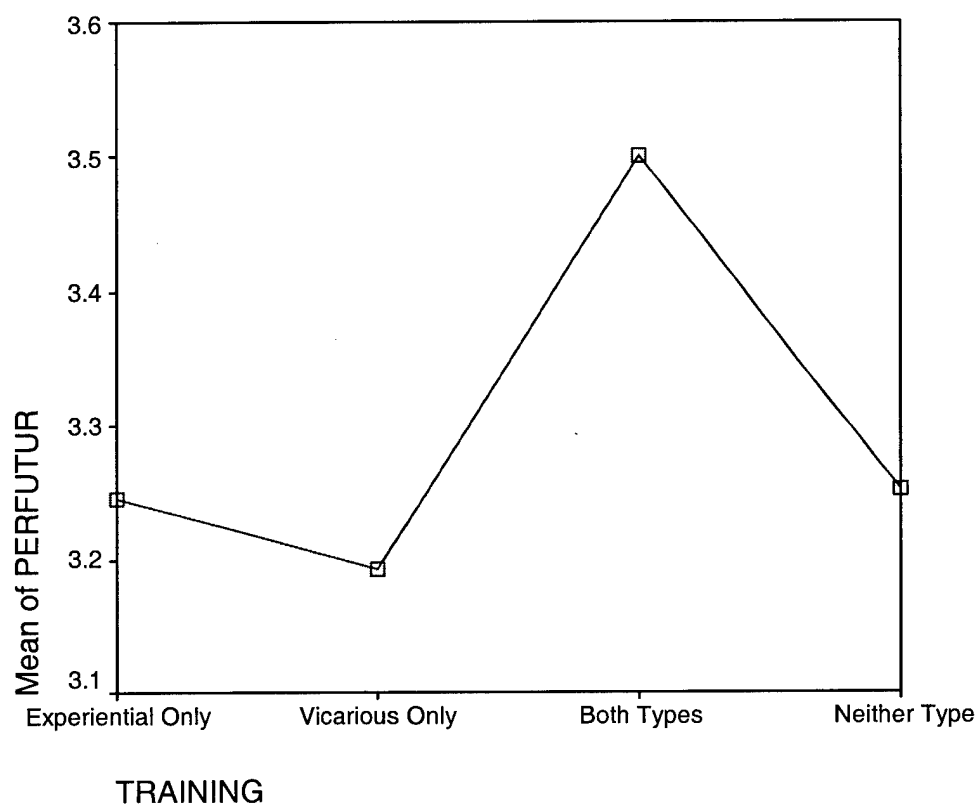

Figure IV-11. Means Plot for Personal Future Measure

Other Factors

Other factors were also examined to determine if they could better explain the differences in perceptions better than prior training and experiences. The demographic information allowed the subjects to be grouped by rank, education level, time in service, and status as military or civilian. These other factors were excluded from the primary research because it would be difficult for the USAF to take action to correct any significant differences from these factors. These factors

are more like characteristics and were expected to contribute to differences. However, if differences were apparent from training, then the USAF could effectively change their training programs to positively impact their employees' perceptions of CS&P. A complete ANOVA test for each factor is available in Appendix F.

Rank. Rank obviously would contribute to differences in perceptions due to varying levels of responsibility and information flow. Overall, perceptions appeared to lower as rank increased, but only the difference between the GM-13 and O-3 and under groups was statistically different, as seen in Figure IV-12.
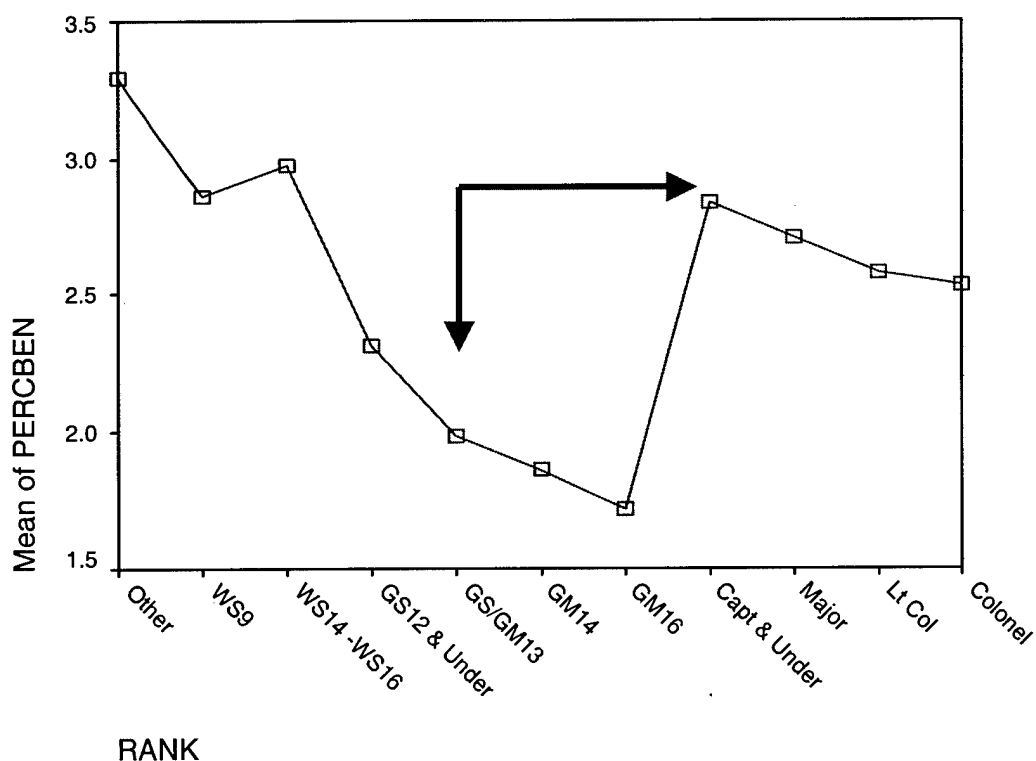

RANK

Figure IV-12. Means Plot – Rank & Perceived Benefits

Military/Civilian. The difference between military and civilian subjects was statistically significant with $\alpha = 0.024$. Though there was a difference in number of military (n = 242) and civilian (n = 97) subjects, the difference in perceptions was expected as seen in Figure IV-13. This was expected because of the impact of CS&P is more adverse for civilians than military members. Once a function is outsourced, military members are reassigned to other duties or another location, so the impact is not quite as severe. Civilian members are laid off if the function is outsourced or usually face downsizing if the function is kept in-house. Thus, civilian members were expected to be more negative regarding CS&P than military members.
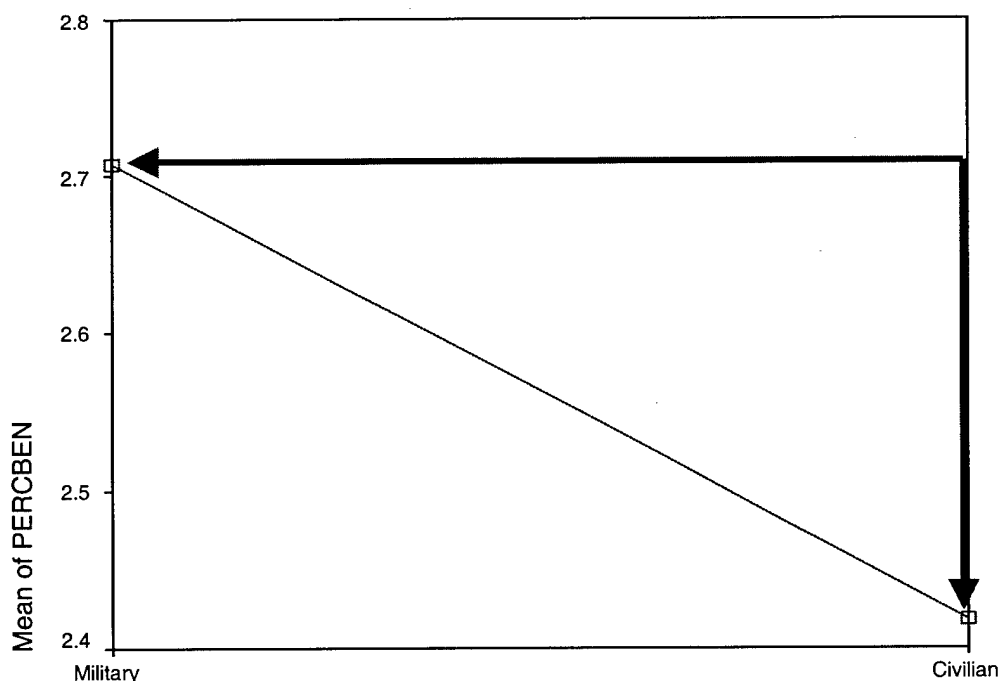

Figure IV-13. Means Plot- Military/Civilian & Perceived Benefits

Tenure. Time in service, or tenure, was also expected to account for some differences in perceptions of CS&P. It is obvious that the number of years an individual has worked for an organization is representative of the individual's commitment to the organization. Changes in the way things have been done in the past may be more strongly resisted by members who have been in the organization for a longer time than newer members not as accustomed to the status quo. Figure IV-14 represents the differences between groups of varying tenure with the DoD. The only difference that was statistically significant was that between the middle managers and individuals that had been in the DoD the longest.
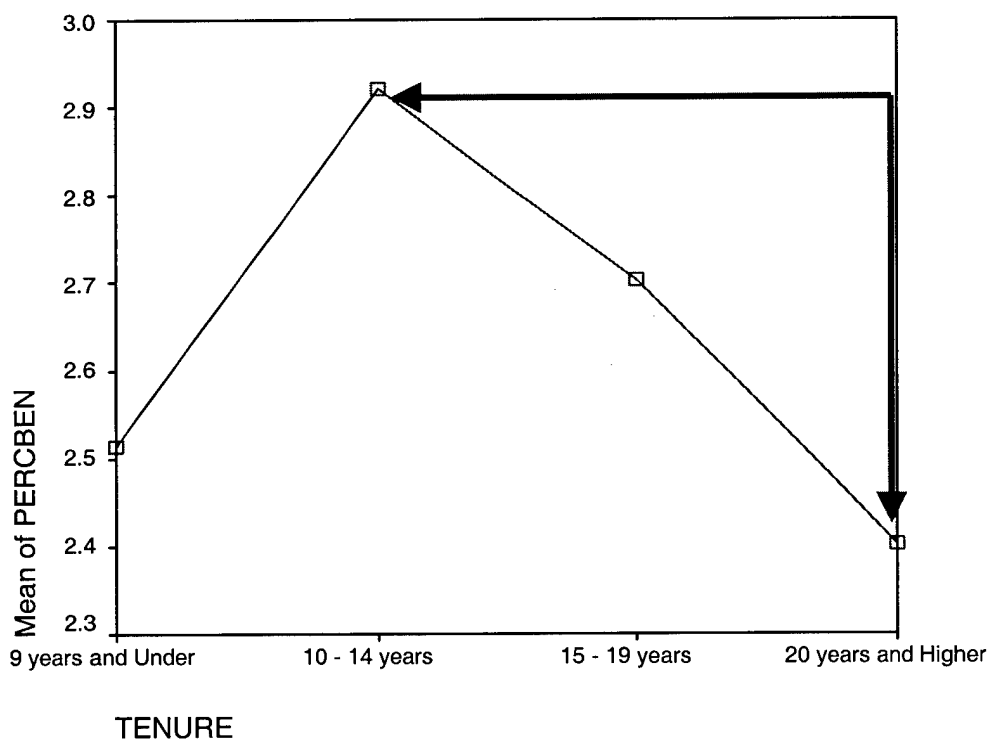

Figure IV-14. Means Plot - Tenure & Perceived Benefits

Education Level. Level of education was thought to possibly contribute to differences in perceptions of CS&P by influencing rank and understanding of the underlying principles of CS&P. Figure IV-15 indicates that no differences were statistically significant and no real trends are apparent.
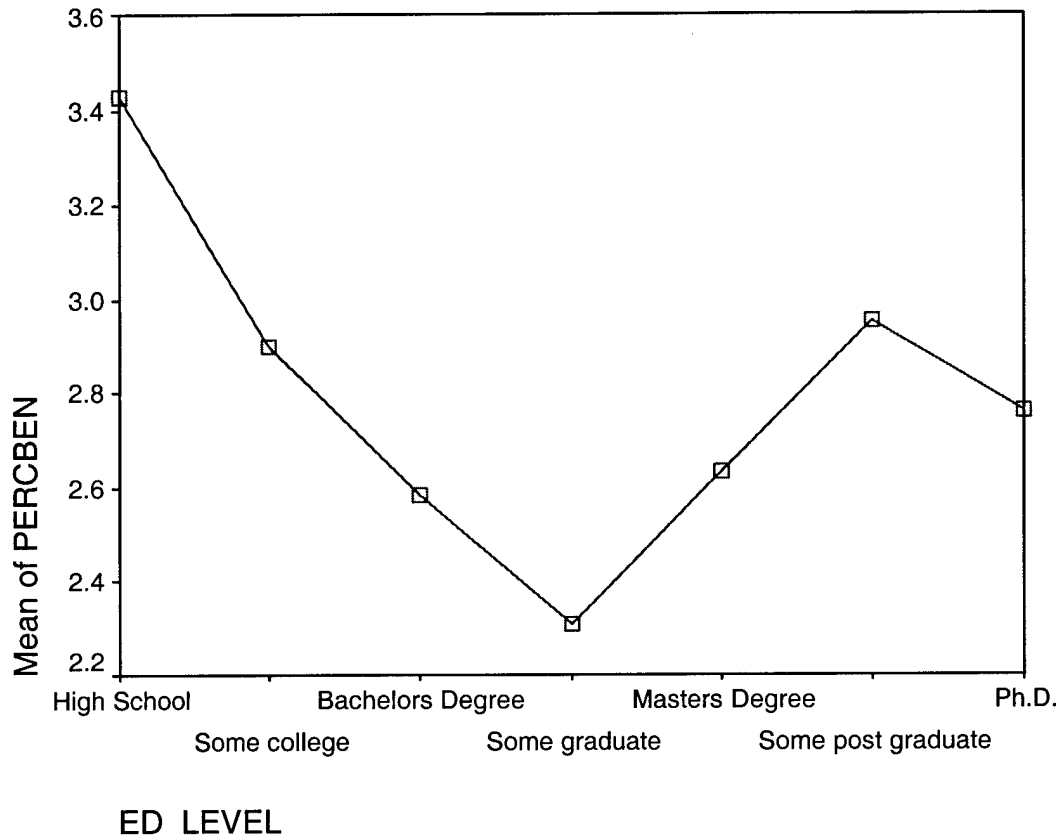

ED_LEVEL

Figure IV-15. Means Plot - Education Level & Perceived Benefits

Summary of Results and Discussion

The factor analysis required some scale refinement to identify the nine measures used in this study: general knowledge of CS&P, quality of information, fairness, perceived benefits, organizational need for change, management support from senior leadership, management support from supervisor, personal benefit –

personal gain, personal benefit – personal future. Table IV-6 summarizes the

means for each of these constructs for the four groups. For example, the results

for the general knowledge items indicated that subjects with both types of training

self reported the highest knowledge of CS&P, followed in order by vicariously

trained, experientially trained, and then neither type of training. Other factors were

examined to explain differences in perceptions of CS&P, but were not included in

the main research effort due to the USAF's inability to act on these factors.

Table IV-6. Summary of Means

TRAINING		General Know	QOI	Fairness	Perceived Benefits	Org NFC	Mgt Sup Sr Lead	Mgt Sup Supervis	Personal Gain	Personal Future
Experiential Only	Mean	4.3208	3.7436	2.9216	2.5238	3.0771	3.8173	3.0094	2.4359	3.2453
	N	53	52	51	51	49	52	53	52	53
	Std Dev	1.0218	1.2133	1.2869	1.0027	1.1590	1.2368	1.1115	1.1892	1.4298
Vicarious Only	Mean	4.5636	3.9576	3.0113	2.5873	2.9961	3.6636	3.3818	2.4583	3.1930
	N	55	55	53	54	57	55	55	56	57
	Std Dev	.8239	.8210	1.1724	1.1075	1.1325	1.2325	1.1744	.9981	1.2598
Both Types	Mean	4.8592	4.0643	2.6986	2.3551	2.7052	3.7778	3.3732	2.3287	3.5000
	N	71	70	71	70	72	72	71	72	73
	Std Dev	.8321	1.2192	1.1543	1.0539	1.0791	1.3212	1.1672	1.0898	1.4743
Neither Type	Mean	4.0658	3.3647	3.1490	2.7978	3.2134	3.7483	3.0638	2.4697	3.2516
	N	152	149	149	154	151	151	149	154	153
	Std Dev	1.0011	1.1218	1.0786	1.0080	.9689	1.0659	1.0595	.9525	1.2801
Total	Mean	4.3595	3.6754	2.9920	2.6266	3.0442	3.7515	3.1753	2.4321	3.2946
	N	331	326	324	329	329	330	328	334	336
	Std Dev	.9908	1.1501	1.1535	1.0443	1.0658	1.1762	1.1179	1.0268	1.3437

V. **Conclusions**

This chapter combines the results and discussion in relation to the hypothesis they support or refute. The four hypotheses were each targeted with scales to measure how the subjects felt about CS&P in relation to a hypothesis. Below are conclusions drawn from the data for each of the hypotheses.

Hypothesis 1

> *Officers and civilians who have actively participated in the outsourcing process understand the CS&P program and the information they have received better than officers and civilians who have only vicarious or no experience.*

The scales general knowledge of CS&P and quality of information were used to support Hypothesis 1. There were no statistically significant differences in the perceptions of those that had experiential training and those with only vicarious or no experience. However, subjects with both types of training reported significantly higher knowledge than those with neither, as did those with vicarious only. This lends support to the effectiveness of vicarious training and the amount of training, but not that active participation is more effective. Thus, the difference that Hypothesis 1 looks for does not exist within the data for this study.

Hypothesis 2

> *Officers and civilians who have actively participated in the CS&P program perceive the program to be more legitimate than those with only vicarious or no experience.*

The two scales used to assess the perceived legitimacy of the CS&P program were fairness and organizational need for change. Individuals that had

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neither type of training agreed more than the other groups that the organization needed the change and that the change, CS&P, was fair. Subjects with both types of training were significantly more negative than those with only one type of training or no training. This disparity may result from a discrepancy between the classroom training and actual experiences. When subjects experience CS&P and learn what the program is supposed to accomplish or vice versa, they feel more negative about CS&P than if they had had only one type of training or no training at all. There were no significant differences between subjects with active participation and those with only vicarious or no training, rejecting Hypothesis 2.

Hypothesis 3

> *Officers and civilians with active experience in the CS&P program perceive more benefits from the program than individuals with only vicarious or no experience.*

All of the groups slightly disagreed that they observed the perceived benefits of outsourcing, with an average value of 2.6, between slightly disagree and moderately disagree. However, those with both types of training disagreed significantly more than those with no training, again reinforcing the possible discrepancy between classroom training and active participation. This measure indicated that any type of training experienced lowered agreement with perceived benefits; subjects with both reported the lowest agreement with perceived benefits. Again, no significant differences were reported between subjects with active participation and those with only vicarious or no training. Thus, Hypothesis 3 is rejected by the data. Appendix D displays the items that went into the perceived benefits scale separately.

> *Officers and civilians with active experience in the CS&P program perceive that their leaders and supervisors support CS&P and that CS&P is beneficial to their jobs.*

Four scales were used to assess Hypothesis 4: management support from senior leadership, management support from supervisors, personal benefit – personal gain, and personal benefit – personal future. The results indicated that individuals with experiential training agreed the most that they had support from senior leadership. Subjects with vicarious training expressed the least agreement with senior leadership support. However, the difference between the experiential and vicarious groups' perceptions of senior leadership support was not great enough to be statistically significant. This is most likely explained by the close guidance and consulting provided by the USAF and command staffs to the relatively few outsourcing boards. Thus, individuals with outsourcing experience actually witnessed the support from senior management. Conversely, the vicarious training may be negatively affecting the perception of support from senior leadership. Individuals that had vicarious training and those with both types of training agreed that they had their supervisor's support. A possible explanation may be the supervisor's role in obtaining classroom training by making time in the schedule, providing funding for the subject to take the class, and other supervisory roles.

Experientially trained subjects reported a more agreeable future and less personal gain than their vicariously trained counterparts, though the differences are not statistically significant. Individuals with both types of experience reported the

most agreement for a positive future and the least amount for personal gain. These results imply that the vicarious training might have been relaying to subjects that CS&P would make their jobs easier, but with a less bright future. Since no differences were statistically significant between those with experiential training and those with vicarious or none at all, Hypothesis 4 could not be supported by the data results.

Summary of Hypotheses Findings

All four hypotheses were rejected, finding that subjects with actual experience in the CS&P program were reporting statistically the same results as subjects with only classroom experience. Subjects with more training reported higher understanding than those with less training, indicating that the training, whether experiential or vicarious, was effective in getting the information to the subjects. Respondents with both types of training reported the highest level of understanding. However, individuals with both types of training were overall more negative of the CS&P program than their counterparts with either type of training or no training at all.

Recommendation to the USAF

The data suggests a synergistic effect from both types of training in providing information. To maximize understanding and increase the chances of success for CS&P, the USAF should provide both types of training. The USAF currently has facilities to provide vicarious training at AFIT, but providing experiential training may be more difficult. Case studies might be employed in the

current classroom training to provide instructors a way to assess the students' application of their acquired knowledge. Also, the USAF could consider bringing potential team members to an ongoing study before beginning their own A-76 study to observe real world application of CS&P theory. The quality of information provided by the vicarious training is satisfactory and may suffice alone if providing experiential training is limited since both were proved to be equally effective. As discussed in the literature review, better communication of information increases the likelihood of success for the change and results in more complete work statements and foundations in partnering. However, there appeared to be a discrepancy between what individuals were experiencing and what was being taught in the classroom, contributing to a significantly negative perception of CS&P. Classroom training should be reevaluated and made to match what actually happens to prevent the overall negative perceptions. Finally, the classroom training should emphasize the support from senior leadership.

The data indicated that the individuals with vicarious training had the least favorable view of their personal future and career opportunities due to CS&P. This could have drastic implications as this bleak outlook has been linked with force separation (Kennedy, 1999:51). Retention of this middle management is critical for the future of the USAF, so something should be changed in vicarious training to provide assurance that careers and opportunities would remain after CS&P.

Limitations of This Study

This study only took a cross sectional look at the USAF civil engineer middle management perceptions on CS&P. Thus, causality of the differences between

groups could not be determined. Compounding factors were not included in this analysis. Some examples of these factors are rank of the subject, education level, time in service, or status as civilian or military. These factors may significantly affect the conclusions drawn in this study. Time in service may also play a part in determining the subject's perception on outsourcing. Appendix F includes some of the comparisons for these other groups. Though these factors may account for some of the differences in perceptions, they are difficult to change. USAF leaders can do little to alter a person's time in service or military/civilian status. The factor most quickly and easily changed is the training the USAF provides and its content. Thus, this study did not incorporate these other possibly significant factors.

Suggestions for Further Study

As discussed, this study only took a cross sectional look. A more complete longitudinal study would take measurements from a group of subjects with no experience, then split them into a control group, and send a group to vicarious training, a group to experiential training, and a group to both types of training. Measurements could then be compared to determine which experience had the greatest effect. Further examination of the data may indicate which courses or experiences were the most effective in increasing approval of CS&P. The data gathered from this study could also be analyzed with the compounding factors indicated for a more complete understanding of what may have actually caused the differences between groups. Another area for further study would be to compare actual cost data with the perceptions of individuals at that location. This would indicate if negative perceptions were helping, hurting, or having no effect on CS&P.

Final Comments

This study found that overall the middle managers in USAF civil engineering have a negative perception of CS&P. Vicarious training could be restructured to address this negative perception, especially if it might impact career outlooks and force retention.   The negativity concerning CS&P comes as no surprise. The benefits that are supposed to come from outsourcing are not observed by most of the study participants. Indeed, even the government cannot determine if CS&P is actually saving money (GAO Report, 2000). The negative perceptions need to be addressed by senior leadership before any other action because CS&P only works if the managers are committed to it, which they are currently not. This lack of commitment may seriously hamper the current CS&P strategy and the USAF as a whole. The negativity also influences force retention, another major USAF concern.

Appendices

Appendix A: Survey

Civil Engineer Attitudes on Outsourcing

The objective of this short questionnaire is to better enable Air Force leaders to understand and improve the Competitive Sourcing and Privatization program. Completion of this study is entirely voluntary.

Please answer all items by filling in the appropriate spaces directly on the questionnaire itself or by typing a response in the space provided. If, for any item, you do not find a response that fits your situation exactly, use the one that is the closest to the way you feel.

Your reply will be treated in strict confidence and will be available only to the researcher and the research advisor. In addition, when the results of this study are published, readers will not be able to identify specific individuals. Results of this study will be available upon request to the researcher.

Thank you for your cooperation in participating in this study. If you have any questions, please contact the researcher, Capt Steven W. Lo, at:

Capt Steven W. Lo, USAF
AFIT/ENV BLDG 640
2950 P Street
Wright-Patterson AFB OH 45433-7765
Phone: (937) 255-2998
Fax: (937) 656-4699
e-mail: Steven.Lo@afit.af.mil

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	1	2	3	4	5	6
	Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree

Part One: Competitive Sourcing & Privatization (CS&P)

For the following questions, **CS&P** refers to the Air Force **C**ompetitive **S**ourcing and **P**rivatization program. For each statement, please fill in the circle for the number that indicates the extent to which you agree the statement is true. Use the scale above for your responses.

		1	2	3	4	5	6
1.	I know which parties should be involved in an A-76 study.	☐	☐	☐	☐	☐	☐
2.	I understand the purpose of an A-76 study.	☐	☐	☐	☐	☐	☐
3.	I have received accurate information about CS&P.	☐	☐	☐	☐	☐	☐
4.	I have received timely information about CS&P.	☐	☐	☐	☐	☐	☐
5.	I have received the right amount of information regarding CS&P.	☐	☐	☐	☐	☐	☐
6.	The information I have received about CS&P was consistent.	☐	☐	☐	☐	☐	☐
7.	I think CS&P information is accessible.	☐	☐	☐	☐	☐	☐
		1	2	3	4	5	6
8.	The information I have received about CS&P was communicated properly.	☐	☐	☐	☐	☐	☐
9.	I understand why the Air Force (USAF) is pursuing CS&P.	☐	☐	☐	☐	☐	☐
10.	I understand what partnering is (in relation to CS&P).	☐	☐	☐	☐	☐	☐
11.	I think that an A-76 study is a fair way to implement CS&P.	☐	☐	☐	☐	☐	☐
12.	I think that CS&P overall is good for the USAF.	☐	☐	☐	☐	☐	☐
13.	I think that CS&P overall is good for Civil Engineering (CE).	☐	☐	☐	☐	☐	☐

Appendix A: Survey

14.	I trust my leadership has examined CS&P thoroughly.	☐	☐	☐	☐	☐	☐
		1	**2**	**3**	**4**	**5**	**6**
15.	I think that the decision to go to CS&P is justified.	☐	☐	☐	☐	☐	☐
16.	I think the CS&P program will lead to reduced operating costs.	☐	☐	☐	☐	☐	☐
17.	I think the CS&P program will allow the USAF to focus on our core competencies.	☐	☐	☐	☐	☐	☐
18.	I think that the CS&P program will save dollars that will be used for force modernization.	☐	☐	☐	☐	☐	☐
19.	I think outsourcing will give the USAF access to new technologies and functional expertise.	☐	☐	☐	☐	☐	☐
20.	I think CS&P allows the USAF to share risks with contractors.	☐	☐	☐	☐	☐	☐
21.	I think CS&P will help the USAF shed excess infrastructure.	☐	☐	☐	☐	☐	☐
		1	**2**	**3**	**4**	**5**	**6**
—	I think CS&P will improve overall services and performance.	☐	☐	☐	☐	☐	☐
23.	There are legitimate reasons for the USAF to outsource CE functions.	☐	☐	☐	☐	☐	☐
24.	There are a number of rational reasons for this outsourcing strategy.	☐	☐	☐	☐	☐	☐
25.	No one has explained why CS&P must be pursued.	☐	☐	☐	☐	☐	☐
26.	It doesn't make much sense for the USAF to initiate CS&P in CE.	☐	☐	☐	☐	☐	☐
27.	Outsourcing is clearly needed in CE.	☐	☐	☐	☐	☐	☐
28.	The time that the USAF is spending on A-76 studies should be spent on something else.	☐	☐	☐	☐	☐	☐
		1	**2**	**3**	**4**	**5**	**6**
29.	I think the USAF is implementing this outsourcing strategy just because it can.	☐	☐	☐	☐	☐	☐
30.	I think there are real business needs that make outsourcing necessary.	☐	☐	☐	☐	☐	☐
31.	If the USAF outsources CE, I can envision financial benefits coming my way.	☐	☐	☐	☐	☐	☐
32.	Outsourcing will disrupt many of the personal relationships that I have	☐	☐	☐	☐	☐	☐

		1	2	3	4	5	6
	developed.						
33.	Outsourcing CE will give me new career opportunities.	☐	☐	☐	☐	☐	☐
34.	When the USAF outsources, I don't believe that there is anything for me to gain.	☐	☐	☐	☐	☐	☐
35.	My future in CE will be limited because of outsourcing.	☐	☐	☐	☐	☐	☐
		1	**2**	**3**	**4**	**5**	**6**
36.	In the long run, I feel that it will be worthwhile for me if the USAF adopts this outsourcing strategy.	☐	☐	☐	☐	☐	☐
37.	I am worried that I will lose some of my status in the USAF if it outsources some of CE.	☐	☐	☐	☐	☐	☐
38.	Outsourcing makes my job easier.	☐	☐	☐	☐	☐	☐
39.	The effort required to outsource is rather small when compared to the benefits I will see from it.	☐	☐	☐	☐	☐	☐
40.	I think that the USAF will benefit overall from CS&P.	☐	☐	☐	☐	☐	☐
41.	The USAF is going to be more productive if it outsources.	☐	☐	☐	☐	☐	☐
42.	When CE adopts this strategy, CE will be better equipped to meet its operational objectives.	☐	☐	☐	☐	☐	☐
		1	**2**	**3**	**4**	**5**	**6**
43.	Outsourcing will improve the USAF's overall efficiency.	☐	☐	☐	☐	☐	☐
44.	The USAF will lose some valuable assets if it outsources.	☐	☐	☐	☐	☐	☐
45.	Outsourcing matches the priorities of the USAF.	☐	☐	☐	☐	☐	☐
46.	USAF leaders have sent a clear signal that the USAF is going to outsource CE.	☐	☐	☐	☐	☐	☐
47.	I think that USAF leaders have done a great job in bringing about CS&P.	☐	☐	☐	☐	☐	☐
48.	The senior leaders have served as role models for the CS&P program.	☐	☐	☐	☐	☐	☐
		1	**2**	**3**	**4**	**5**	**6**
49.	The USAF's top decision-makers have put all their support behind this CS&P effort.	☐	☐	☐	☐	☐	☐
50.	The USAF's most senior leaders are committed to CS&P.	☐	☐	☐	☐	☐	☐

51.	My supervisor has stressed the importance of CS&P.	☐	☐	☐	☐	☐	☐
52.	My supervisor has a positive attitude toward CS&P.	☐	☐	☐	☐	☐	☐
53.	I am sure that the USAF leaders will change their minds before actually outsourcing CE.	☐	☐	☐	☐	☐	☐
54.	I think CE is spending a lot of time on CS&P when my peers and I don't even want it implemented.	☐	☐	☐	☐	☐	☐

Part Two: Background Information

1. Please indicate your gender:

    ☐ Male ☐ Female

2. What is your duty Air Force Specialty Code or Occupational Series Skill Code?

3. What is your current duty title?

4. Indicate your Grade:

    | Officer ▼ | - | 1 ▼ |

5. How many years have you been on active duty/working in the Air Force or the Department of Defense?

    | 1 ▼ |

6. Indicate your highest educational level:

    ☐ High School

    ☐ Some college work but no degree

    ☐ Bachelor's Degree

    ☐ Some graduate work but no degree

    ☐ Masters Degree

    ☐ Some post graduate work but no degree

    ☐ Ph.D.

7. Indicate the outsourcing short courses or conferences you have attended (please check all that apply):

    ☐ Competitive Sourcing (MGT 444)

    ☐ Housing Privatization (MGT 445)

    ☐ Utilities Privatization (MGT 446)

    ☐ Civil Engineer Commander/Deputy (MGT 400)

Appendix A: Survey

☐ AFCESA A-76 Conference

☐ AFCESA Outsourcing Conference

☐ Other Outsourcing Related Training

☐ None, **skip to Question 9**

8. How long ago was the latest training you attended? | None ▼ |

9. Have you ever been appointed to or been a part of an A-76 or competitive sourcing (outsourcing) team?

☐ Yes   ☐ No

10. How long ago was your A-76 or outsourcing team experience? | None ▼ |

This completes the assessment. Thank you for your participation. If you have any additional comments, please include them here.

| Submit | Reset |

Civil Engineer Attitudes on Outsourcing

Thank you for taking the Questionnaire.

If you have any questions or comments, please contact the researcher, Capt Steven Lo at:

Capt Steven W. Lo, USAF
AFIT/ENV BLDG 640
2950 P Street
Wright-Patterson AFB OH 45433-7765
Phone: (937) 255-2998
Fax: (937) 656-4699
e-mail: Steven.Lo@afit.af.mil

Appendix B: Demographics
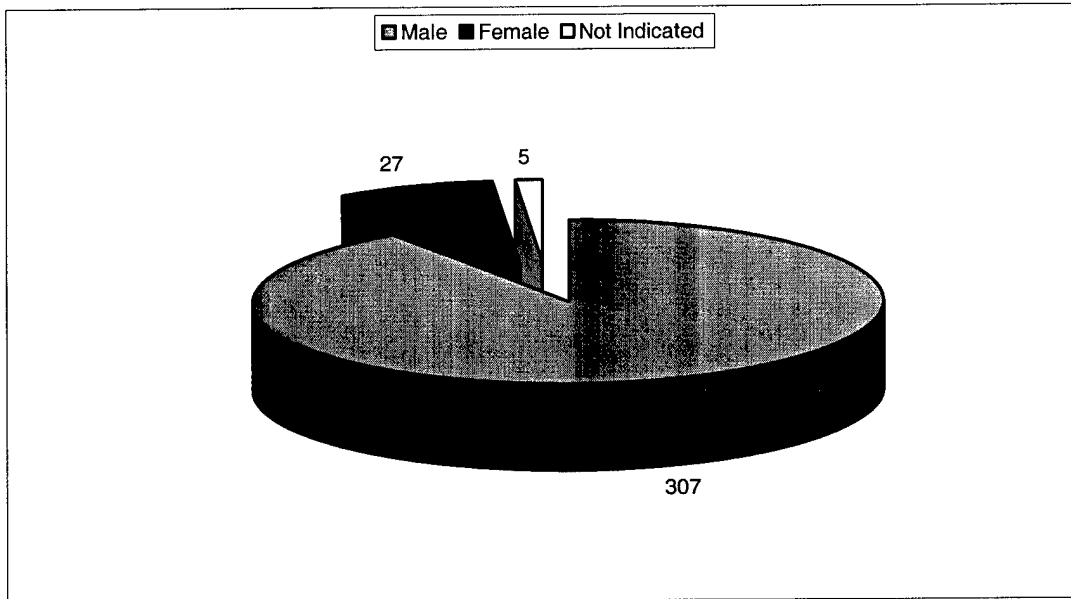
Figure B-1. Gender of Sample
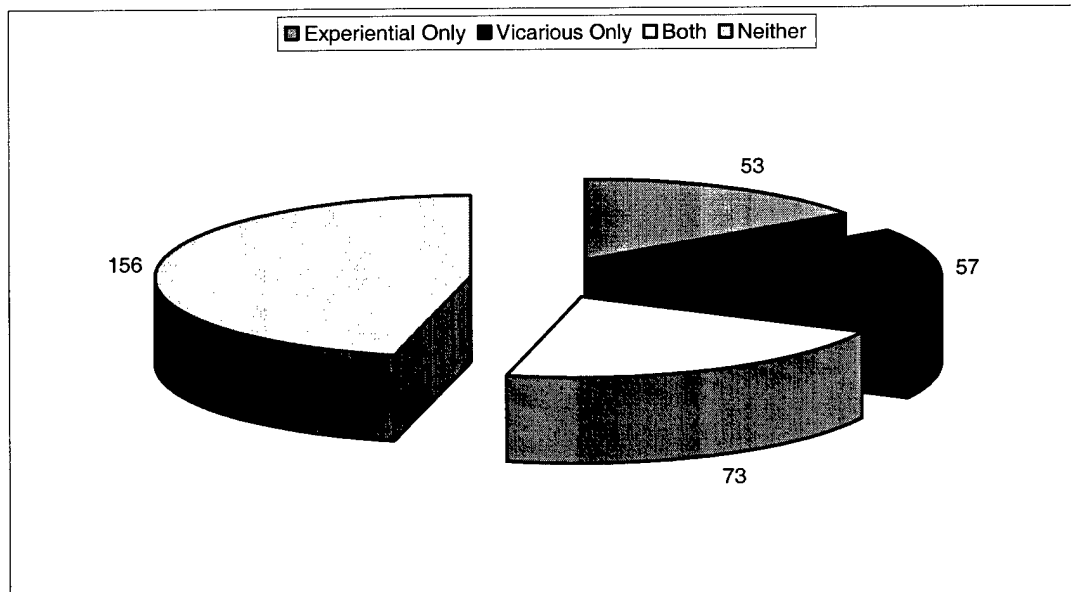
Figure B-2. Training Received by Subjects
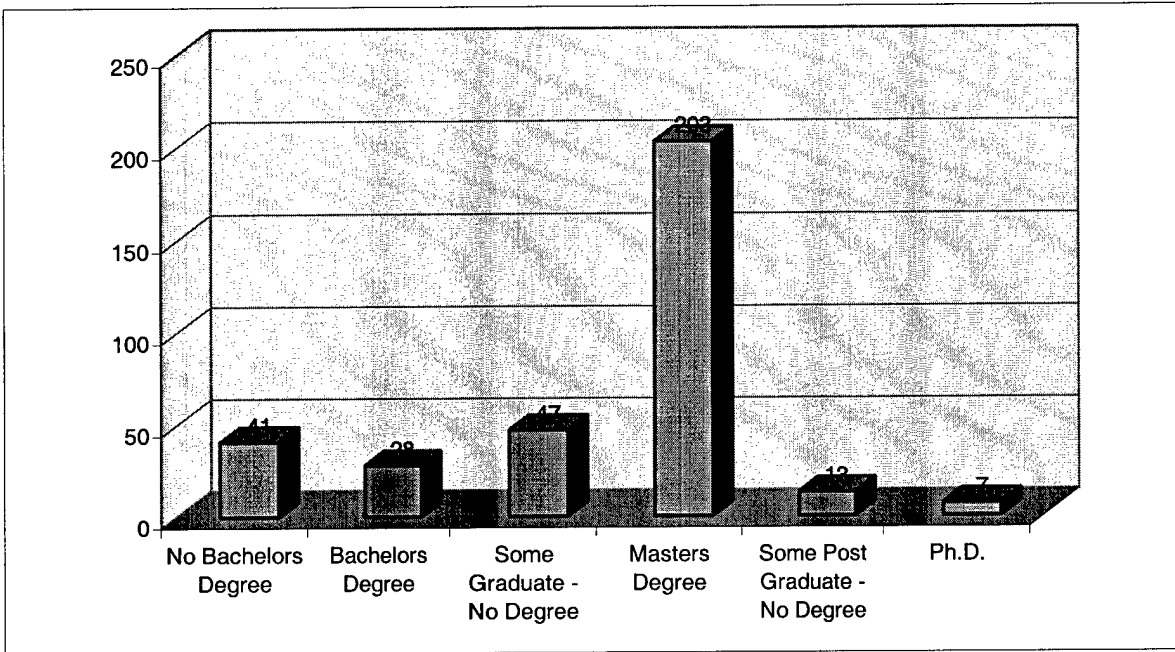
Figure B-3. Education Level of Subjects
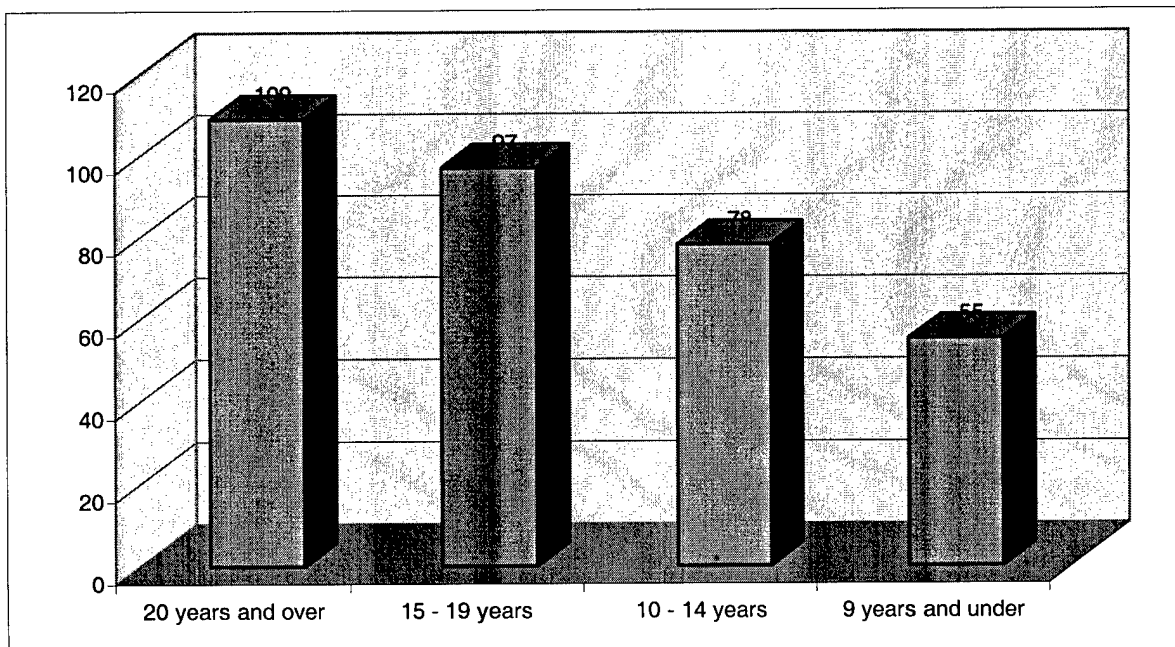
Figure B-4. Years Worked for DoD

Appendix B: Demographics
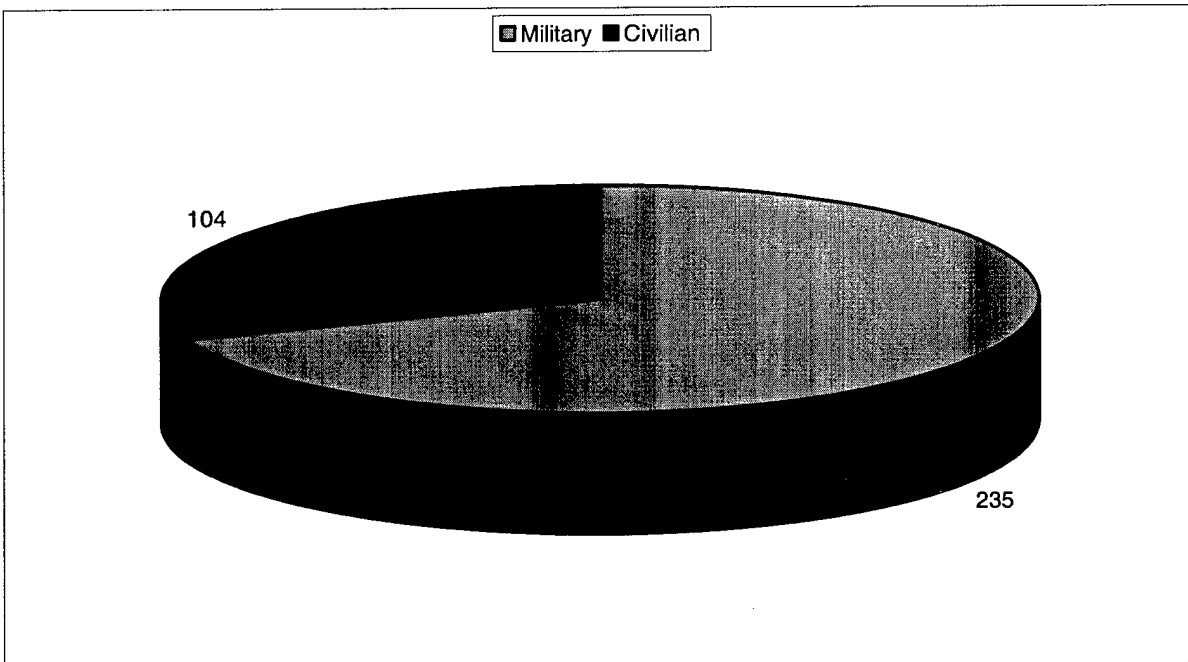
Figure B-5. Subject Status of Military or Civilian
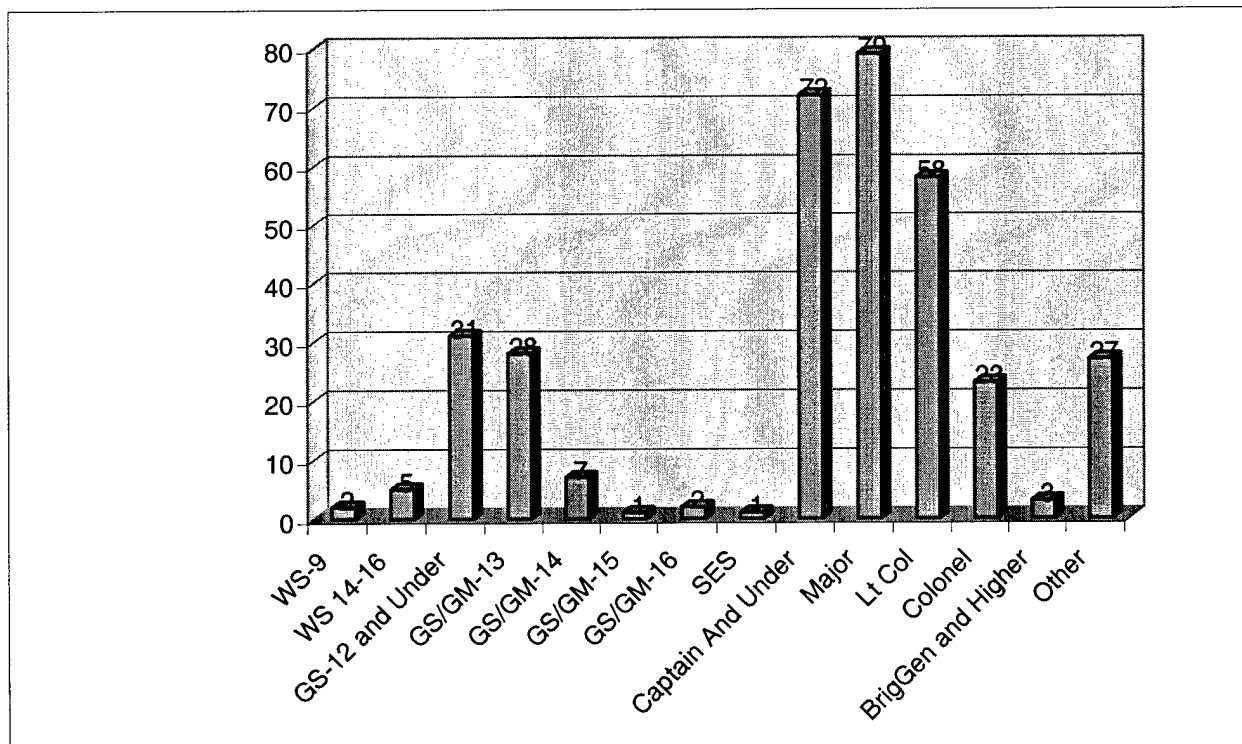
Figure B-6. Rank of Subjects

Appendix C: Statistical Results

Appendix C: Statistical Results

Table C-1. Complete Bonferroni Comparison

Dependent Variable	(I) TRAINING	(J) TRAINING	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
KNOWLEDGE	Experiential Only	Vicarious Only	-.2429	.1815	1.000	-.7247	.2389
		Both Types	-.5384	.1712	.011	-.9928	-.0843
		Neither Type	.2550	.1504	.546	-.1443	.6542
	Vicarious Only	Experiential Only	.2429	.1815	1.000	-.2389	.7247
		Both Types	-.2955	.1694	.492	-.7451	.1541
		Neither Type	.4978	.1484	.005	.1040	.8917
	Both Types	Experiential Only	.5384	.1712	.011	.0840	.9928
		Vicarious Only	.2955	.1694	.492	-.1541	.7451
		Neither Type	.7934	.1355	.000	.4336	1.1532
	Neither Type	Experiential Only	-.2550	.1504	.546	-.6542	.1443
		Vicarious Only	-.4978	.1484	.005	-.8917	-.1040
		Both Types	-.7934	.1355	.000	-1.1532	-.4336
QUALITY OF INFORMATION	Experiential Only	Vicarious Only	-.2140	.2157	1.000	-.7865	.3585
		Both Types	-.3207	.2041	.703	-.8626	.2212
		Neither Type	.3789	.1796	.214	-.0978	.8557
	Vicarious Only	Experiential Only	.2140	.2157	1.000	-.3585	.7865
		Both Types	-.1067	.2009	1.000	-.6400	.4266
		Neither Type	.5929	.1759	.005	.1259	1.0599
	Both Types	Experiential Only	.3207	.2041	.703	-.2212	.8626
		Vicarious Only	.1067	.2009	1.000	-.4266	.6400
		Neither Type	.6996	.1616	.000	.2707	1.1285
	Neither Type	Experiential Only	-.3789	.1796	.214	-.8557	.0978
		Vicarious Only	-.5929	.1759	.005	-1.0599	-.1259
		Both Types	-.6996	.1616	.000	-1.1285	-.2707
FAIRNESS	Experiential Only	Vicarious Only	-.0898	.2246	1.000	-.6861	.5066
		Both Types	.2230	.2102	1.000	-.3351	.7811
		Neither Type	-.2274	.1858	1.000	-.7207	.2658
	Vicarious Only	Experiential Only	.0898	.2246	1.000	-.5066	.6861
		Both Types	.3127	.2079	.801	-.2392	.8646
		Neither Type	-.1377	.1832	1.000	-.6239	.3486
	Both Types	Experiential Only	-.2230	.2102	1.000	-.7811	.3351
		Vicarious Only	-.3127	.2079	.801	-.8646	.2392
		Neither Type	-.4504	.1652	.040	-.8889	-.0119
	Neither Type	Experiential Only	.2274	.1858	1.000	-.2658	.7207
		Vicarious Only	.1377	.1832	1.000	-.3486	.6239
		Both Types	.4504	.1652	.040	.0119	.8889

* The mean difference is significant at the .05 level.

Appendix C: Statistical Results

Multiple Comparisons - Bonferroni

Dependent Variable	(I) TRAINING	(J) TRAINING	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
PERCEIVED BENEFITS	Experiential Only	Vicarious Only	-.0635	.2019	1.000	-.5994	.4724
		Both Types	.1687	.1903	1.000	-.3365	.6740
		Neither Type	-.2740	.1670	.612	-.7173	.1694
	Vicarious Only	Experiential Only	.0635	.2019	1.000	-.4724	.5994
		Both Types	.2322	.1873	1.000	-.2649	.7293
		Neither Type	-.2105	.1635	1.000	-.6445	.2236
	Both Types	Experiential Only	-.1687	.1903	1.000	-.6740	.3365
		Vicarious Only	-.2322	.1873	1.000	-.7293	.2649
		Neither Type	-.4427	.1490	.019	-.8383	-.0471
	Neither Type	Experiential Only	.2740	.1670	.612	-.1694	.7173
		Vicarious Only	.2105	.1635	1.000	-.2236	.6445
		Both Types	.4427	.1490	.019	.0471	.8383
ORGANIZATION NEED FOR CHANGE	Experiential Only	Vicarious Only	.0810	.2050	1.000	-.4631	.6251
		Both Types	.3719	.1949	.343	-.1454	.8891
		Neither Type	-.1363	.1730	1.000	-.5955	.3229
	Vicarious Only	Experiential Only	-.0810	.2050	1.000	-.6251	.4631
		Both Types	.2909	.1865	.719	-.2043	.7860
		Neither Type	-.2173	.1636	1.000	-.6515	.2169
	Both Types	Experiential Only	-.3719	.1949	.343	-.8891	.1454
		Vicarious Only	-.2909	.1865	.719	-.7860	.2043
		Neither Type	-.5081	.1507	.005	-.9081	-.1082
	Neither Type	Experiential Only	.1363	.1730	1.000	-.3229	.5955
		Vicarious Only	.2173	.1636	1.000	-.2169	.6515
		Both Types	.5081	.1507	.005	.1082	.9081
MGT SUPPORT SR LEADER	Experiential Only	Vicarious Only	.1537	.2284	1.000	-.4525	.7599
		Both Types	.0395	.2149	1.000	-.5308	.6099
		Neither Type	.0690	.1898	1.000	-.4349	.5729
	Vicarious Only	Experiential Only	-.1537	.2284	1.000	-.7599	.4525
		Both Types	-.1141	.2114	1.000	-.6754	.4471
		Neither Type	-.0847	.1859	1.000	-.5783	.4089
	Both Types	Experiential Only	-.0395	.2149	1.000	-.6099	.5308
		Vicarious Only	.1141	.2114	1.000	-.4471	.6754
		Neither Type	.0294	.1691	1.000	-.4194	.4783
	Neither Type	Experiential Only	-.0689	.1898	1.000	-.5729	.4349
		Vicarious Only	.0847	.1859	1.000	-.4089	.5783
		Both Types	-.0294	.1691	1.000	-.4783	.4194

* The mean difference is significant at the .05 level.

Appendix C: Statistical Results

Multiple Comparisons - Bonferroni

Dependent Variable	(I) TRAINING	(J) TRAINING	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
MGT SUPPORT SUPERVISOR	Experiential Only	Vicarious Only	-.3724	.2139	.496	-.9403	.1955
		Both Types	-.3638	.2018	.434	-.8994	.1718
		Neither Type	-.0543	.1778	1.000	-.5262	.4175
	Vicarious Only	Experiential Only	.3724	.2139	.496	-.1955	.9403
		Both Types	.0086	.1996	1.000	-.5214	.5385
		Neither Type	.3181	.1754	.424	-.1474	.7836
	Both Types	Experiential Only	.3638	.2018	.434	-.1718	.8994
		Vicarious Only	-.0086	.1996	1.000	-.5385	.5214
		Neither Type	.3095	.1603	.326	-.1160	.7349
	Neither Type	Experiential Only	.0543	.1778	1.000	-.4175	.5262
		Vicarious Only	-.3181	.1754	.424	-.7836	.1474
		Both Types	-.3095	.1603	.326	-.7349	.1160
PERSONAL GAIN	Experiential Only	Vicarious Only	-.0224	.1983	1.000	-.5489	.5040
		Both Types	.1072	.1874	1.000	-.3903	.6047
		Neither Type	-.0338	.1652	1.000	-.4722	.4047
	Vicarious Only	Experiential Only	.0224	.1983	1.000	-.5040	.5489
		Both Types	.1296	.1835	1.000	-.3574	.6167
		Neither Type	-.0114	.1607	1.000	-.4379	.4152
	Both Types	Experiential Only	-.1072	.1874	1.000	-.6047	.3903
		Vicarious Only	-.1296	.1835	1.000	-.6167	.3574
		Neither Type	-.1410	.1470	1.000	-.5313	.2493
	Neither Type	Experiential Only	.0338	.1652	1.000	-.4047	.4722
		Vicarious Only	.0114	.1607	1.000	-.4152	.4379
		Both Types	.1410	.1470	1.000	-.2493	.5313
PERSONAL FUTURE	Experiential Only	Vicarious Only	.0523	.2567	1.000	-.6290	.7336
		Both Types	-.2547	.2428	1.000	-.8990	.3896
		Neither Type	-.0064	.2144	1.000	-.5754	.5627
	Vicarious Only	Experiential Only	-.0523	.2567	1.000	-.7336	.6290
		Both Types	-.3070	.2378	1.000	-.9381	.3241
		Neither Type	-.0587	.2087	1.000	-.6127	.4954
	Both Types	Experiential Only	.2547	.2428	1.000	-.3896	.8990
		Vicarious Only	.3070	.2378	1.000	-.3241	.9381
		Neither Type	.2484	.1913	1.000	-.2595	.7562
	Neither Type	Experiential Only	.0064	.2144	1.000	-.5627	.5754
		Vicarious Only	.0587	.2087	1.000	-.4954	.6127
		Both Types	-.2484	.1913	1.000	-.7562	.2595

* The mean difference is significant at the .05 level.

Appendix D: Perceived Benefits Items

Appendix D: Perceived Benefits Items

Table D-1. Descriptive Statistics for Perceived BenefitsItems

TRAINING		Q16	Q17	Q18	Q19	Q20	Q21	Q22
Experiential Only	Mean	2.13	2.72	2.08	2.91	2.79	2.71	2.42
	N	53	53	52	53	53	52	53
	Std. Deviation	1.27	1.49	1.30	1.48	1.25	1.46	1.22
Vicarious Only	Mean	2.18	3.02	2.24	2.86	2.84	3.09	2.33
	N	56	56	55	56	57	57	57
	Std. Deviation	1.34	1.54	1.37	1.54	1.47	1.54	1.30
Both Types	Mean	2.03	2.51	2.07	2.70	2.61	2.56	2.17
	N	72	72	71	71	72	71	72
	Std. Deviation	1.26	1.24	1.33	1.49	1.43	1.42	1.13
Neither Type	Mean	2.46	3.08	2.38	3.18	2.97	3.01	2.38
	N	155	154	154	154	154	155	153
	Std. Deviation	1.31	1.33	1.18	1.36	1.22	1.36	1.11
Total	Mean	2.27	2.89	2.24	2.98	2.84	2.88	2.33
	N	336	335	332	334	336	335	335
	Std. Deviation	1.30	1.39	1.27	1.45	1.32	1.43	1.16

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

Item 16. I think that the CS&P program will lead to reduced operating costs.
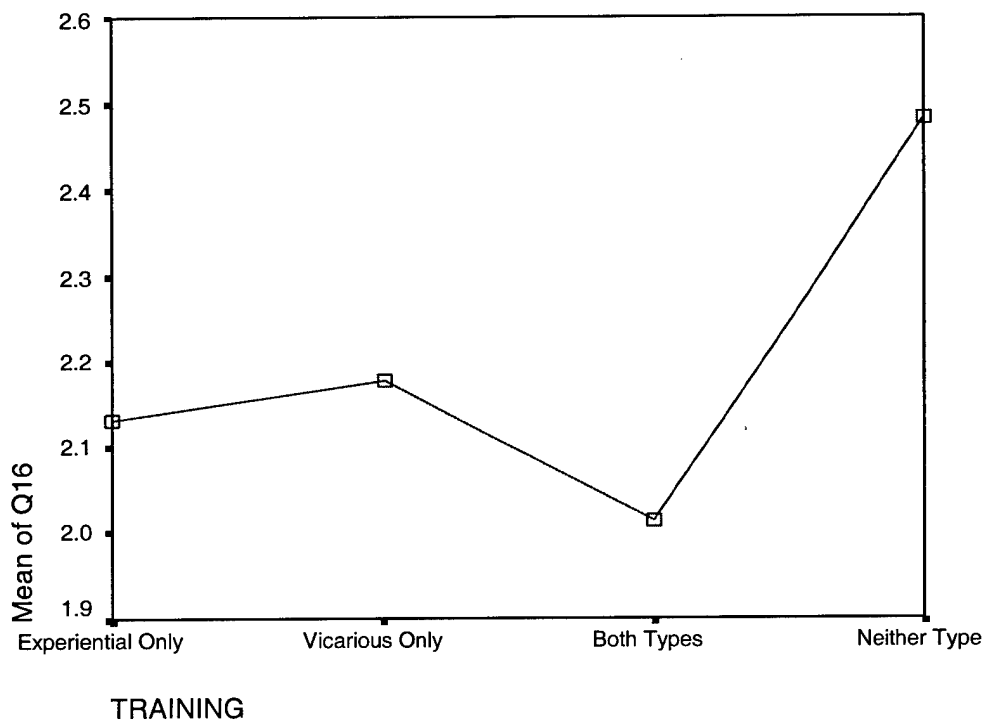
Figure D-1. Means Plot for Item 16 (Reduced Operating Costs)

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

Item 17. I think the CS&P program will allow the USAF to focus on our core competencies.

TRAINING
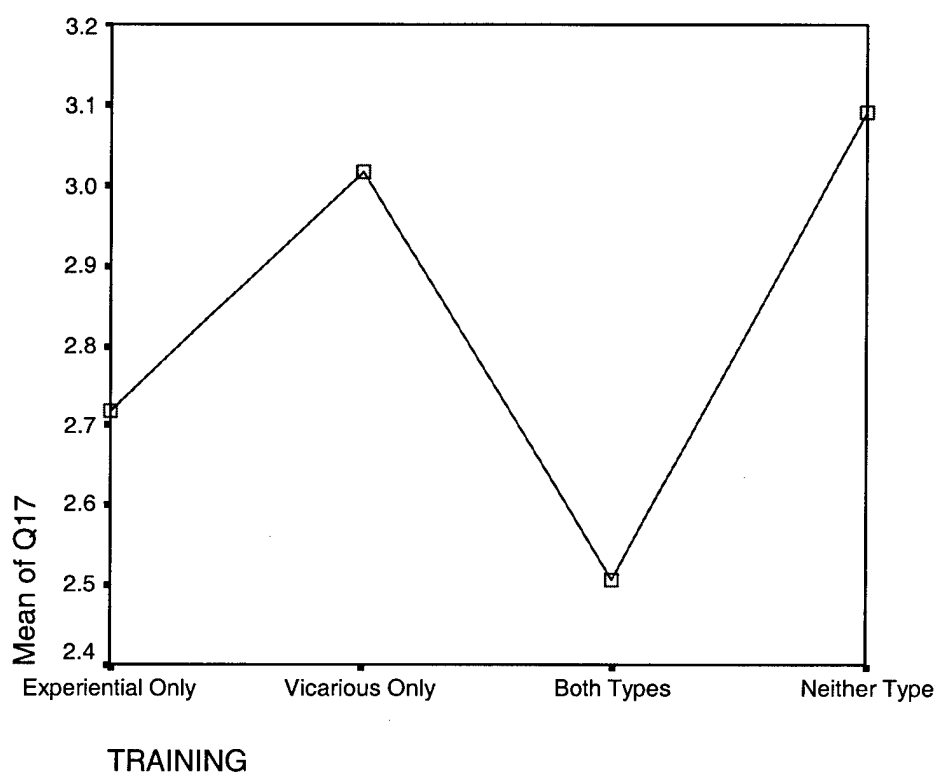
Figure D-2. Means Plot for Item 17 (Core Competencies)

Appendix D: Perceived Benefits Items

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

Item 18. I think that the CS&P program will save dollars that will be used for force modernization.

TRAINING
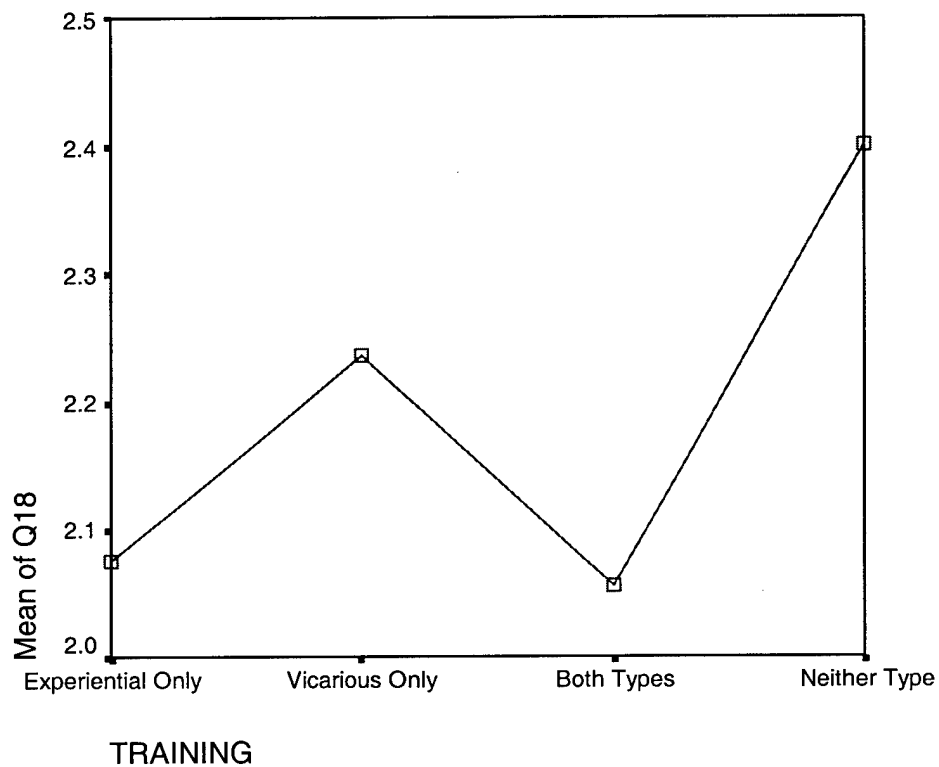
Figure D-3. Means Plot for Item 18 (Force Modernization)

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

Item 19. I think outsourcing will give the USAF access to new technologies and

functional expertise.

TRAINING
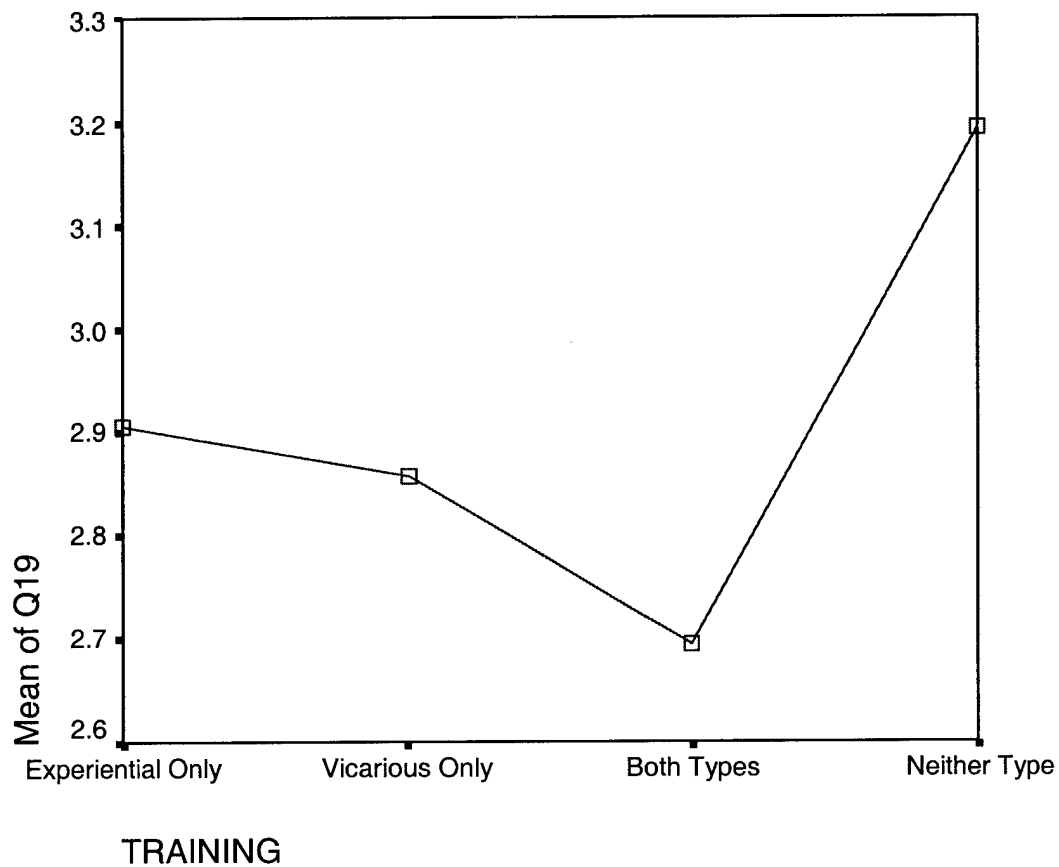
Figure D-4. Means Plot for Item 19 (New Technologies)

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

Item 20. I think CS&P allows the USAF to share risks with contractors.

TRAINING
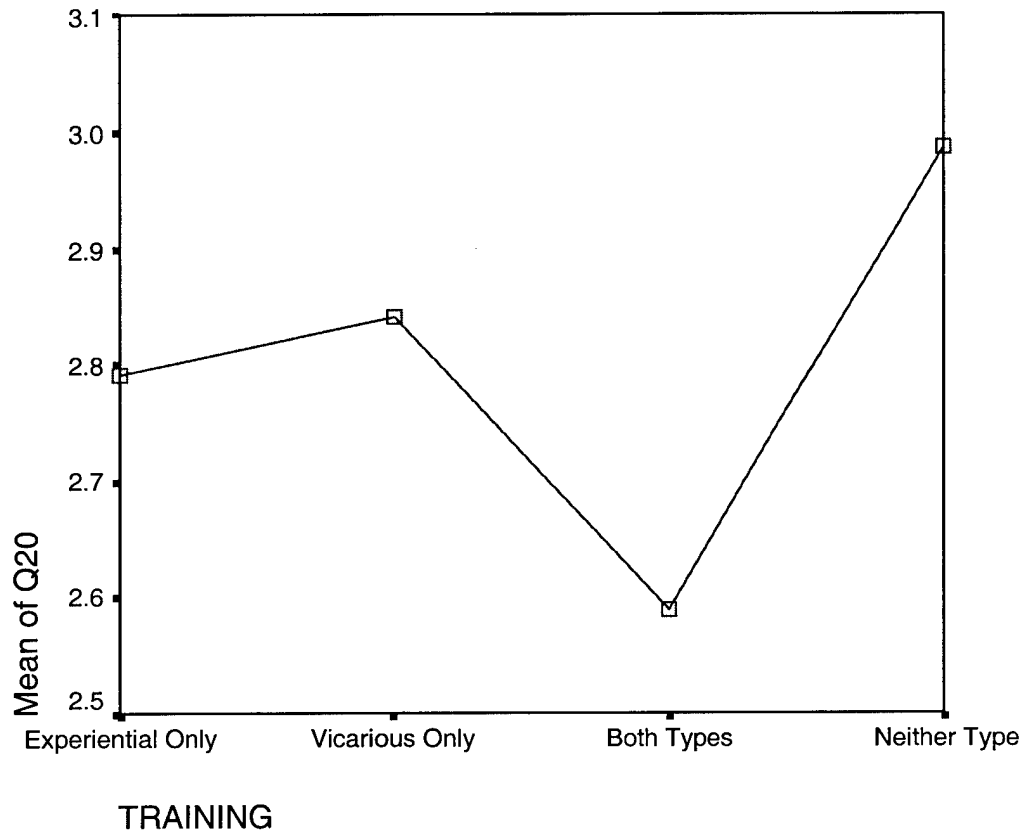
Figure D-5. Means Plot for Item 20 (Share Risks)

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

Item 21. I think CS&P will help the USAF shed excess infrastructure.
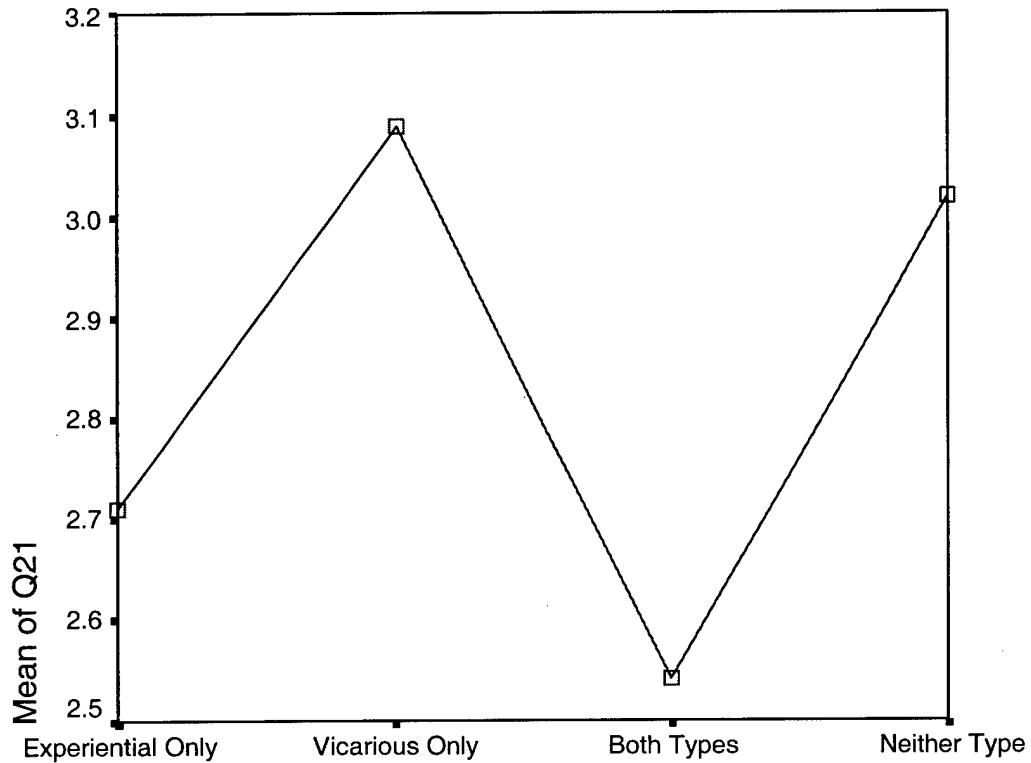
TRAINING

Figure D-6. Means Plot for Item 21 (Shed Infrastructure)

Appendix D: Perceived Benefits Items

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

Item 22. I think CS&P will improve overall services and performance.

TRAINING
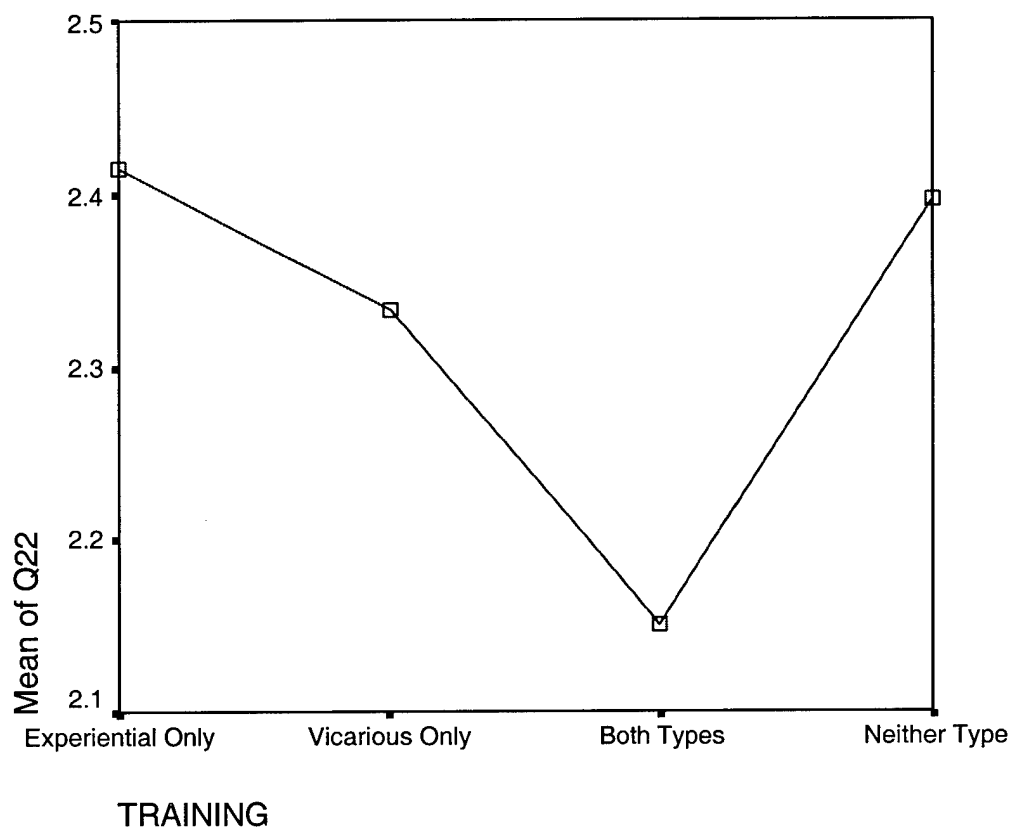
Figure D-7. Means Plot for Item 22 (Improve Service & Performance)

Appendix E: Comments From Survey Participants

Appendix E: Comments From Survey Participants

Comments may have been slightly modified to protect the identity of the survey participants.

Numbers and adjusted criteria can drive us into any end position we desire. CS&P brings some benefits--not necessarily a universal cure.

This entire concept of outsourcing and privatization costs too much and weakens our wartime/contingency ability across the board in CE.
A missing question: are there alternatives to outsourcing?

Outsourcing in CE has completely overlooked the critical business information system, the IWIMS. If we had a modern business information system instead of IWIMS, our in-house CE forces could easily win most A-76 studies.
I think outsourcing CE in the non-deployable commands, i.e. AETC, AFMC, Space Command, is a good idea. Outsourcing in ACC, AMC, and the overseas commands would not be as advantageous.

26 years as Military 15 year civilian (Housing Management, Operations,IE etc)Highest Military rank (E-9) Civilian (GS-11) all AF CE.

CS&P is a tool the current administartion is using to drawdown the military. I'd like to see how much money the program is really saving.

We may gain dollars in the end, but we lose resources and the folks to do the jobs. How can we keep our folks trained and ready in contingencies, if they aren't doing it day to day?

The savings assumed to be gained from CS&P are not matched by actual savings from a life-cycle view when compared to in-house operations.
Would have been nice to have a "no opinion/not applicable" option.
The Af will learn too late that they have mortgaged the future with must pay bills and experience reduced service at increased costs--stupidest thing I have ever lived through and I am glad I can retire early and not have to endure this fiasco!!

#1 problem - outsourcing limits flexibility

#2 problem - Where does outsourcing stop? At what point does the US military become a mercenary force (a.k.a. guns for hire).

Not sure what value you will get from this since I have not been at base level since 94.

need a 'don't know' or 'N/A' option for an answer on the survey

Appendix E: Comments From Survey Participants

I've been a FAC at two different locations. You lose flexibility, costs increase, and we're being boiled down to a deployable resource with limited time to recuperate at a home base making it hard to continue to fill required positions.

I have seen outsourcing before, it starts out competitive then after a few years the Air Force is paying more and having to augment contractors when they fall behind due to weather conditions, special events, etc.

An assumption I'm reading into some of these questions is IF we competitively source, then we will spend more time and emphasis on our wartime jobs. I have not seen this happening.

I have not been in a CE Squadron for many years and consequently have not been involved with discussions or actions involving CS&P.
My flight has already been studied and the MEO won.
I was part of a Technical Evaluation Team...I guess more of a part of the MEO process.

Have fun as you put the data together. Good luck on the remainder of the school program.

Nice background!

By the time our leadership wakes up and sees that outsourcing just isn't going to work, we will have lost our capability and will therefore be long term screwed without the common courtesy of a little Vaseline.

I still believe that near term savings will disappear over time due to contract cost growth. I have had very good experiences with contracted paint and grounds maintenance functions. Good contractors are key to survival.

I have seen three MFH contractors quite. Twice it had to be taken back in-house.

CS&P and UP will not work without proper funding commitment from the Air Staff. These two programs will strangle non-CS&P bases' budgets unless funding for contracts is provided. AETC Trojan Horse briefing is a good illustration of the problem.

I'm at an overseas remote. Not much CS&P action here. I think I've got a relatively basic grasp of the issues, but haven't actually "touched" this issue up close.

Good luck on your thesis!

Appendix E: Comments From Survey Participants

More people need more training. It's lacking. Deploy more info on where AF is going...it's there but lost in the noise.

When decision is made to outsource make sure you include all aspects of the area to be studied. (ie) all wastewater not just operations.

Only experience I have is as a voting member of the HQ USAF Competitive Sourcing and Privatization Panel

We are going to pay with the decreased readiness of the CE squadrons as we'll see the AEF cycle "contract" broken for CE squadrons and other support organizations.

The answers may seem conflicting because there are three different programs within CS&P (utilities, housing, and competitive sourcing) and one answer may not apply to all three.

Hope you have lots of similar stories from us guys here in the real world. At least I hope you do, and that this isn't just research designed to validate the view from Academia, MAJCOMS or the Air Staff.

This system seems to encourage them to see how much they can get away without doing.

A lot of duplicate questions

Working group, responsible for executing the BRAC 95 decision to close Kelly and McClellan AFB. This wasn't per se A-76 experience, but I had visibility to shortfalls in the information that went into the closure decision.

I believe in most cases, we end up accepting lower levels of service regardless of which alternative we ultimately accept. Due to the transition of key military leaders into and out of the bases, the overall degradation is not readily apparent.
I believe that we are getting rid of too much too fast. This leaves us over tasked and under equiped. Our personnel are leaving in droves because they don't see a future in the AF that includes them.

Military personnel absorb more duties--less direct labor (honor guard, etc.)....

The Air Force is a military organization that fights wars. It is not a commercial activity. Much of what we do is very different from the private sector. We cannot always apply private sector concepts to what we do.

Appendix E: Comments From Survey Participants

We cannot provide what the wing commanders need, and our hands will be completely tied. And what's worst, the AF will be forced to pay more for less accomplished.

I no longer wonder why all of my peers are getting out of the AF.

is not politically feasible. Also, once functions are outsourced, a significant amount of available funds must be fenced for these contracts causing much less flexibility with remaining resources to execute other areas of mission.
CS&P Sucks

May want to screen out those who have had nothing to do with CS&P prior to them stumbling through the survey (or before they give up on the survey).
d civil engineering work order and asking a SABER contractor to bid on the same work.

Many of the questions didn't "fit" my background and experience; needed a "N/A" alternative in some cases or "I don't know" alternative to better reflect some situations. Also, I tried to answer without regards to my current position and perspective.

On some of the questions above I didn't agree or disagree, but I had to choose something.

"We have mortgaged with malice aforethought infrastructure to protect the readiness." - Inside The Pentagon, November 2, 2000, Pg 5.

No way to say N/A as I have no direct information or involvement with CSP issues...so most of my Strong Disagree should be interpreted as N/A.
Some additional demographic info (current MAJCOM and current level of assignment - base, HQ, etc.) might have been more worthwhile to ask than gender.

The level of service is also greatly hindered by using contractors, ie the leadership has less control.

Superb young officers getting out of the Air Force because they do not see a future in CE due to outsourcing. If we expect to keep our best newcomers we have to be able to offer them some future.

Organizations have taken the "it's fait accompli" route and have not done the in-depth analysis that might have shown the contractor was not the cheaper option.

Appendix E: Comments From Survey Participants

Time to focus manpower on key strategic and tactical issues that we know will help us. See how that works first, then move on other areas that may be more contentious.

Had you had a choice of unsure, rather than having to choose slightly disagree or slightly agree, I would have chosen that quite often during the questioning. There is much about this outsourcing that I am uncertain about.

Contractors deciding the best interest of the gov't? How efficient is that? Design and Construction should be considered inherently governmental because of the dollars involved and the type of work.

If the commander has special emphasis programs, etc that aren't specifically spelled out in the PWS they become areas of contention.

I am only related to CS&P through identifying CE units that may be outsourced based on their readiness/wartime requirements. I have never really been involved in it otherwise.

Federal government can depend on the private sector to provide certain goods and services, it SHOULD--not only if it is cheaper, but simply because this is RIGHT.

Savings are false and misstated in my opinion. The whole end point and goals of the program are mis-represented and blown out of proportion.

Part of A-76 Studies at Laughlin AFB, TX (1991) and Sheppard AFB, TX (1997). Unfortunately my feedback may bot be of substantial benefit as I am in a Special Duty assignment and have worked outside the career field for some time.
ing of CE initially and moved to talking to outsourcing all of CE--made answering difficult).

There is a vast disparity between the treatment of successful MEOs and contractors when it becomes necessary to modify a statement of work.

I believe outsourcing has short term benefits but will go the way of the dot.comm in the stock market. By the time leadership has figured out that it is all smoke and mirrors it will be too late.

Outsourcing has some benefits and I like they way the AF is doing it - a base at a time versus functions within a CE squadron.

Outsourcing CE will adversely impact our mobility mission.

Appendix E: Comments From Survey Participants

The point I was trying to make is that CS&P, despite some of the advertising, DOES end up affecting end strength and manpower. The climate has changed over the last couple of years and the interest in "gaining effeciencies" that actually were to facilitate downsizing CAN NOT continue. We can already identify several functional areas that have almost outsourced themselves out of the AEF construct. The new face of the AF is EAF and we have to weigh each and every CS&P initiative against it's potential to affect the capability of that career field to support AEF while continuing to maintain home station operations.

I have two main thoughts: 1) I thought it was interesting that you chose to combine Competitive Sourcing and Privatization without distinction. Although they are related, they are separate programs. In fact, I believe they are separate enough to impact the conclusions of your research, 2) I wonder how these questions support your research model and the relationships they draw.
Different because...
Some items that differentiate the programs
*   Different courses and target audiences
*   Different program managers/offices at MAJCOM and USAF (some may be the same)
*   Different policy and policy-making processes
*   Different legislative authorities
*   Some fundamental differences like utilities will never be "recompeted" like A-76. Competition/Efficiency assumptions get muddled as a result.
This is the short list of issues. Your Question 7 on Part II treats it like privatization is part of outsourcing (i.e. It lists "AFCESA Outsourcing Conference"..there have been several for UP as well). Question 9 asks about being a part of an A-76 team. How about privatization teams like a base Utilities Privatization (UP) Integrated Process Team (IPT) or the like? I don't deal with outsourcing much, but I do deal with privatization. Should I answer all the questions as if they were written for privatization? Lastly, housing privatization draws very different reactions than utilities privatization. I think the questions should allow for that distinction.

Research Model

Your stated research objective is to "study a relationship between the prior training of the individuals involved in competitive sourcing and the successful implementation of the cost saving organization." Sounds like MEO stuff, but I could read that as UP as well. It would be interesting to see your research model. What hypothesis are you testing? Question 31 looses me entirely. Not sure what sort of financial benefits would come and what relationship that question is intended to reveal between training and implementation. Question 53 is odd too, CE is being outsourced all over the place. This question sounds as if it hasn't happened yet. Seems like your survey does a real good job of revealing attitudes about

Appendix E: Comments From Survey Participants

Competitive Sourcing, confuses the privatization issue and has a somewhat tenuous connection with the effectiveness of training.

My greatest concern for outsourcing is that we are not considering the civilian workforce. Working for an outsourced contractor for a year-to-year contract does not give them stability in their job. For this reason the best people will migrate to the most stable jobs, away from the base.
Another problem is the push of taking military out of perceived "non-military" functions, such as utility privatization. This is left over from the mentality that the AF CE mission is to fix runways and provide bed down, when in reality, peace keeping and humanitarian missions will be requiring these "non-military" skills.
The real truth is that it is easier to pay a contractor to provide a service than it is to get a permanent position (because of arbitrary manpower limitations without concern for work levels). I believe it would actually save money in the long run by making it easier to hire a person rather than to hire a contractor.
I am actively involved in Housing Privatization and see a lot of immediate benefits to the AF members that will be living in privatized housing but am unsure of the long-term benefits. I also see on a daily basis how the loss of government employees to run Military Family Housing is negatively affecting the base level federal employees.
I really hope that Congress will step in and put greater limitations on OS&P because I believe these are the only ones that can stop our current trend.

Appendix F: Compounding Factors

Appendix F: Compounding Factors

Table F-1. ANOVA for Rank

		Sum of Squares	df	Mean Square	F	Sig.
KNOWLEDG	Between Groups	28.760	10	2.876	3.100	.001
	Within Groups	295.043	318	.928		
	Total	323.803	328			
QOI	Between Groups	30.561	10	3.056	2.408	.009
	Within Groups	397.286	313	1.269		
	Total	427.847	323			
FAIRNESS	Between Groups	55.812	10	5.581	4.698	.000
	Within Groups	369.450	311	1.188		
	Total	425.262	321			
PERCBEN	Between Groups	33.018	10	3.302	3.296	.000
	Within Groups	316.521	316	1.002		
	Total	349.539	326			
ONFC	Between Groups	58.289	10	5.829	5.949	.000
	Within Groups	309.611	316	.980		
	Total	367.900	326			
MSSRL	Between Groups	12.150	10	1.215	.877	.555
	Within Groups	439.338	317	1.386		
	Total	451.488	327			
MSSUP	Between Groups	16.834	10	1.683	1.356	.200
	Within Groups	391.124	315	1.242		
	Total	407.958	325			
PERGAIN	Between Groups	27.412	10	2.741	2.767	.003
	Within Groups	317.994	321	.991		
	Total	345.407	331			
PERFUTUR	Between Groups	63.752	10	6.375	3.847	.000
	Within Groups	535.307	323	1.657		
	Total	599.060	333			

Table F-2. ANOVA for Military/Civilian

		Sum of Squares	df	Mean Square	F	Sig.
KNOWLEDG	Between Groups	4.838	1	4.838	4.987	.026
	Within Groups	319.130	329	.970		
	Total	323.968	330			
QOI	Between Groups	5.837	1	5.837	4.460	.035
	Within Groups	424.055	324	1.309		
	Total	429.892	325			
FAIRNESS	Between Groups	16.997	1	16.997	13.259	.000
	Within Groups	412.782	322	1.282		
	Total	429.779	323			
PERCBEN	Between Groups	5.572	1	5.572	5.175	.024
	Within Groups	352.101	327	1.077		
	Total	357.673	328			
ONFC	Between Groups	36.971	1	36.971	36.026	.000
	Within Groups	335.583	327	1.026		
	Total	372.554	328			
MSSRL	Between Groups	4.744	1	4.744	3.455	.064
	Within Groups	450.381	328	1.373		
	Total	455.124	329			
MSSUP	Between Groups	3.989	1	3.989	3.214	.074
	Within Groups	404.681	326	1.241		
	Total	408.670	327			
PERGAIN	Between Groups	5.384	1	5.384	5.171	.024
	Within Groups	345.689	332	1.041		
	Total	351.073	333			
PERFUTUR	Between Groups	2.480	1	2.480	1.375	.242
	Within Groups	602.351	334	1.803		
	Total	604.830	335			

Appendix F: Compounding Factors

Table F-3. ANOVA for Tenure

		Sum of Squares	df	Mean Square	F	Sig.
KNOWLEDG	Between Groups	8.140	3	2.713	2.809	.040
	Within Groups	315.828	327	.966		
	Total	323.968	330			
QOI	Between Groups	18.753	3	6.251	4.896	.002
	Within Groups	411.139	322	1.277		
	Total	429.892	325			
FAIRNESS	Between Groups	21.001	3	7.000	5.480	.001
	Within Groups	408.778	320	1.277		
	Total	429.779	323			
PERCBEN	Between Groups	13.176	3	4.392	4.144	.007
	Within Groups	344.497	325	1.060		
	Total	357.673	328			
ONFC	Between Groups	30.911	3	10.304	9.802	.000
	Within Groups	341.643	325	1.051		
	Total	372.554	328			
MSSRL	Between Groups	12.171	3	4.057	2.986	.031
	Within Groups	442.953	326	1.359		
	Total	455.124	329			
MSSUP	Between Groups	8.163	3	2.721	2.201	.088
	Within Groups	400.506	324	1.236		
	Total	408.670	327			
PERGAIN	Between Groups	3.224	3	1.075	1.019	.384
	Within Groups	347.849	330	1.054		
	Total	351.073	333			
PERFUTUR	Between Groups	30.275	3	10.092	5.831	.001
	Within Groups	574.555	332	1.731		
	Total	604.830	335			

Appendix F: Compounding Factors

Table F-4. ANOVA for Education Level

		Sum of Squares	df	Mean Square	F	Sig.
KNOWLEDG	Between Groups	6.491	6	1.082	1.104	.360
	Within Groups	317.476	324	.980		
	Total	323.968	330			
QOI	Between Groups	18.158	6	3.026	2.345	.031
	Within Groups	411.734	319	1.291		
	Total	429.892	325			
FAIRNESS	Between Groups	10.911	6	1.819	1.385	.220
	Within Groups	414.888	316	1.313		
	Total	425.799	322			
PERCBEN	Between Groups	10.104	6	1.684	1.559	.159
	Within Groups	346.734	321	1.080		
	Total	356.838	327			
ONFC	Between Groups	13.772	6	2.295	2.056	.058
	Within Groups	358.420	321	1.117		
	Total	372.193	327			
MSSRL	Between Groups	6.543	6	1.090	.792	.577
	Within Groups	443.510	322	1.377		
	Total	450.053	328			
MSSUP	Between Groups	11.802	6	1.967	1.605	.145
	Within Groups	392.121	320	1.225		
	Total	403.924	326			
PERGAIN	Between Groups	9.638	6	1.606	1.536	.166
	Within Groups	340.848	326	1.046		
	Total	350.485	332			
PERFUTUR	Between Groups	27.139	6	4.523	2.601	.018
	Within Groups	570.351	328	1.739		
	Total	597.490	334			

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Vita

Captain Steven Lo was raised in Childress, TX. He entered the United States Air Force Academy in 1992 and graduated on 29 May 1996. Upon graduation, he received a regular commission in the United States Air Force.

Captain Lo was first assigned to 3 CES working in Maintenance Engineering at Elmendorf Air Force Base, Alaska. He finished up his tour in Anchorage, Alaska, in Base Development. He then attended the Air Force Institute of Technology, completing his master's degree in engineering and environmental management. Upon graduation, Captain Lo joined the Red Devils of 8 CES at Kunsan Air Base, Republic of Korea, for a one-year remote assignment.

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14. ABSTRACT
The Department of Defense (DoD) and the United States Air Force (USAF) have moved toward an aggressive stance to competitively source and privatize (CS&P) support functions as much as possible. This move is intended to shrink support costs and redirect the savings to force and equipment modernization. In addition, the USAF hopes to realize improved services, gain access to technology, share risks with contractors, and allow its forces to focus on the core competencies. In order to implement CS&P, the USAF communicates information through two major pathways, passive and active. Passive communication is similar to traditional classroom learning where information is read or briefed to subjects. Active training is learning through actual experience. Though both types of training have been proven effective, it is hypothesized that active, or experiential, training positively affects the subject's perception on outsourcing more than passive training. A web-based survey was developed to measure constructs involving perceptions of outsourcing and determine what type of training the subjects had received. Analysis of variance showed no statistically significant differences between these two groups. However, subjects that had received both types of training were overall more negative on their views toward outsourcing.

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